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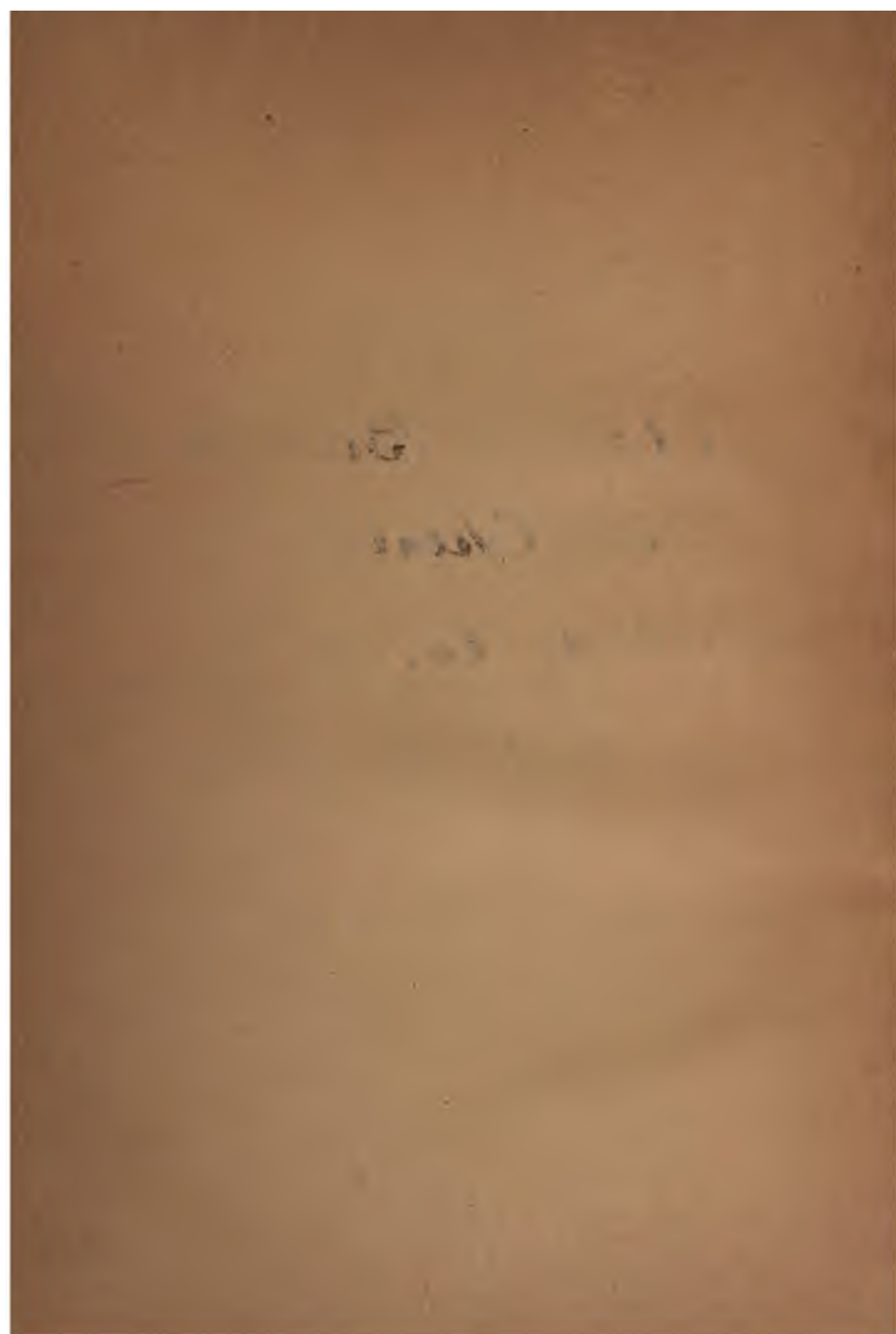
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THE
YEAR-BOOK OF TREATMENT

1889.

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TREATMENT

FOR

1889.

*BEING A CRITICAL REVIEW OF THE PRACTICE OF
MEDICINE AND SURGERY DURING 1888.*

Contributors.

J. MITCHELL BRUCE, M.D.
ALFRED COOPER, F.R.C.S.
SIDNEY COUPLAND, M.D.
SIR DYCE DUCKWORTH, M.D.
GEORGE P. FIELD, M.R.C.S.
JAMES FREDERICK GOODHART, M.D.
REGINALD HARRISON, F.R.C.S.
D. BERRY HART, M.D.
GEORGE ERNEST HERMAN, M.B.
ROBERT MAGUIRE, M.D.
PETER MCBRIDE, M.D.

MALCOLM MORRIS, F.R.C.S.E.
EDMUND OWEN, F.R.C.S.
SIDNEY PHILLIPS, M.D.
HENRY POWER, M.B., F.R.C.S.
CHARLES HENRY RALFE, M.D.
E. S. REYNOLDS, M.D.
JAMES ROSS, M.D.
E. MARKHAM SKERRITT, M.D.
WALTER G. SMITH, M.D.
FREDERICK TREVES, F.R.C.S.
W. J. WALSHAM, F.R.C.S.



PHILADELPHIA:
LEA BROTHERS & CO.

1889.

PREFACE.

THE object of this book is to present to the Practitioner not only a complete account of all the more important advances made in the Treatment of Disease, but to furnish also a Review of the same by competent authorities.

Each department of practice has been fully and concisely treated, and care has been taken to include such recent pathological and clinical work as bears directly upon Treatment.

The medical literature of all countries has been placed under contribution, and the work deals with all the more important matters relating to Treatment that have been published during the year ending September 30th, 1888.

A full reference has been given to every article noticed.

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THE
YEAR-BOOK OF TREATMENT
FOR 1889.

DISEASES OF THE HEART AND
CIRCULATION.

BY J. MITCHELL BRUCE, M.D., F.R.C.P.,

Physician to Charing Cross Hospital, and Assistant-Physician to the Hospital for
Consumption, Brompton.

1. When and how is digitalis to be prescribed?

In a pamphlet on this subject (" *Quand et Comment doit on Prescrire la Digitale?*"), M. Henri Huchard (*Med. Press and Circular*, Sept. 5, 1888, p. 236) repeats the trite observation that, as a general rule, digitalis is contra-indicated in all valvular affections, whatever their nature, when these are sufficiently or over compensated. It is indicated in all valvular affections where compensation has not been established. In short, digitalis is the remedy for asystolism, and not for this or that valvular affection. The diagnosis of the particular valves involved has but little importance in so far as the indication for digitalis is concerned; nor does the loudness of the bruit afford any information of value either in respect of the severity of the lesion or of the need for digitalis. In short, it is the condition of the cardiac muscle, its enfeeblement, as evidenced by clinical observation, which should be held to justify its use.

Digitalism, it should be noted, rarely supervenes in dropsical patients so long as any œdema remains. If, however, the drug be continued after the disappearance of the anasarca, the symptoms are produced with far greater ease. The first indications of saturation are effects quite opposite to those which follow the exhibition of the drug therapeutically, viz. acceleration with irregularity of the heart-beat and lowering of arterial tension, &

proof that digitalis, which relieves asystolism, may, under certain circumstances, give rise to it.

2. How to prescribe digitalis.

In another article on this subject, **M. Henri Huchard** (*Revue Gén. de Clin. et de Thérap.*, March 29, 1888, and *Journ. of Amer. Med. Assoc.*, May 5, 1888) gives the indications for digitalis in certain affections:—

(1) *Cardiac hypertrophy of puberty and the menopause.*—At the age of puberty, he thinks, the cardiac hypertrophy is consecutive to exaggerated arterial tension, and it is this that must be combated. At the menopause he attributes the cardiac hypertrophy to arterio-sclerosis. Thus the cardiac hypertrophy at these two periods of life have practically the same pathogenesis—both are consecutive to increased arterial tension. In these cases digitalis should be prescribed as a sedative in small doses, always giving precedence to depressors of arterial tension and to cardiac sedatives, such as the iodides, nitro-glycerine, and preparations of aconite and arsenic.

(2) *Nephritis, and asystolism of renal origin.*—At the beginning and in the course of interstitial nephritis, when the arterial tension is considerably increased, when there is cardiac hypertrophy often associated with myo-cardial sclerosis, and when diuresis is normal and often very abundant, digitalis should not be prescribed, but arterial depressors, such as the iodides and nitro-glycerine. But afterwards there comes a period when the heart fails, when its contractions become feeble, or visceral congestions and peripheral œdema indicate lowered arterial and increased venous tension, and the kidneys are inactive. The albuminuric patient has now entered the cardiac stage, and is to be treated as a cardiac patient for asystolism. Such simple diuretics as milk, squills, and nitrate of potash are insufficient, and preference must be given to the cardio-vascular diuretics, among which digitalis occupies the first place.

3. Strophanthus.

The literature of this drug during the year is very large, mainly in the form of reports of individual cases in which it was employed, with general conclusions as to its value as compared with digitalis.

M. Henri Huchard (*op. cit.*) says that the diuresis produced by strophanthus, like that of caffeine, is progressive and continuous, whilst the diuresis following digitalis appears, often suddenly, two or three days after the administration of the drug. (*Brit. Med. Journ.*, 1888, vol. ii. p. 1051.)

Dr. G. R. Butler, of Brooklyn (*Brooklyn Med. Journ.*, 1888, p.

374), is of opinion that strophanthus is more particularly adapted to pulmonary diseases attended with cardiac weakness, to functional cardiac affections, and to degenerative conditions of the cardiac muscle. Of valvular lesions it is especially useful in mitral stenosis.

In a review of many recent papers written on this drug, Dr. R. B. Wild (*Med. Chron.*, April, 1888, p. 53) draws the following conclusions of its therapeutic action :

(1) In valvular lesions, dilated heart, and degenerative changes of the cardiac muscle, there is, with one or two exceptions, a general agreement as to the benefit derived from its use. Diuresis occurred in nearly all the cases.

(2) In functional diseases and neuroses of the heart temporary relief was obtained in some cases ; no benefit at all in others ; the best results occurring when the rhythm was markedly irregular.

(3) In Bright's disease, with failure of the heart, good has resulted from strophanthus, diuresis occurring in all the reported cases.

(4) In heart failure from febrile disease, especially typhoid fever, phlegmonous inflammation, and pneumonia, good results have been obtained by many observers.

(5) Some cases are reported in which digitalis gave benefit when strophanthus failed. It is expressly stated that in some of these the arteries were relaxed, and the tension of the pulse low.

(6) Evidence seems to point to the absence of any cumulative effect by continued doses of strophanthus.

(7) It is recommended that the tincture be prescribed, and only mixed with water at the time of administration ; whether any decomposition occurs in aqueous solution is doubtful. Some experiments by Dr. Leopold Larmuth point in this direction, but require further confirmation.

(8) Few bad effects have been recorded, but sickness and diarrhœa have been said to follow its use in some cases, faintness and quickening of the pulse in others ; while several warnings have been published as to the local inflammation and irritation of the skin following its subcutaneous injection.

4. Further experience of strophanthus.

Fraenkel, Guttman, and Langgaard have recently given the result of their experience with strophanthus (*Deut. med. Woch.*, 1888, Nos. 8 and 9). Fraenkel (*Lancet*, Feb. 11, 1888) believes that it modifies blood pressure and causes diuresis, diminishes dyspnoea, and is a genuine cardiac drug. He has employed it in twelve cases of valvular disease, two of arterio-sclerosis and hypertrophy of the left ventricle, three of simple cardiac weakness, and three of

chronic nephritis. Four of the first set were relieved by the administration thrice daily of from five to fifteen drops of the tincture; the others were not benefited. The second and fourth groups were not benefited, but the third was greatly relieved. He concludes from his experience that tincture of strophanthus is an active cardiac tonic, which may take the place of digitalis in some cases, but in no respect exceeds it in value. Where digitalis is impracticable, so also is strophanthus; on the contrary, digitalis is effective where strophanthus is not. Guttman has tried it in forty cases; fifteen were valvular diseases, five fatty myocarditis; the others were nephritis, emphysema, hepatic cirrhosis, and pleural effusion. He maintains that it cannot compare either as a heart drug or as a diuretic with digitalis, but it is of some value in relieving shortness of breath. He prefers the alcoholic tincture of the seeds diluted five times with water, and from 80 to 190 drops of this given every day. Langgaard does not compare strophanthine with digitaline, and thinks it of no value for modifying blood pressure, though it does increase, in his experience, the energy of the cardiac contractions. Csatary prefers the tincture to the infusion, and finds it valuable, in from five to ten drop doses, in causing oedema to disappear and in relieving dyspnoea. The rise in blood pressure and the diminution of the pulse rate he observed to occur half-an-hour after administering the drug, and these effects lasted from one to three days after its discontinuance. The diuresis was found to be simply in proportion to the rise in blood pressure, and strophanthus has no action on the kidney itself. Csatary has also observed a daily loss of body weight amounting to one kilogramme, which he attributes to a loss of water by sweating and by diuresis, and at the same time to a diminished formation of heat. He has noted painful diarrhoea and headache as the only ill effects of strophanthus.

Dr. Shaw (*Pittsburg Med. Review*, Jan., 1888) relates his experience of strophanthus. He has given the tincture frequently, and it has not yet disappointed him. When the action of the heart is feeble and accelerated, due either to functional disorder or to muscular degeneration and dilatation, when there is great difficulty in breathing, with dropsy of the limbs and abdomen, the remedy has so far given the greatest relief. The kidneys have responded with a copious flow of urine, and the dropsy has disappeared; the breathing has become easy, the pulse regular and full, and the whole train of distressing symptoms that accompany advanced cardiac weakness has vanished. The best dose to commence with is two to four

drops three times a day, increased if necessary. The maximum dose is ten drops. So far as noted there appears to be no danger of the cumulative action that renders such care necessary in the prolonged use of digitalis, though the possible occurrence of such an untoward effect should not be overlooked.

5. Strophanthus in heart disease.

Dr. David G. Evans, of Anglesey (*Lancet*, Oct. 27, 1888), reports a series of cases of heart disease treated with tincture of strophanthus, and sums up his conclusions as follows:—

The most interesting features are derived from the fact of the patients having taken large quantities of digitalis from time to time; and this without any very great improvement in any of them.

He conscientiously asserts that our new remedy is vastly superior to the older one (digitalis), especially in mitral complaints and cardiac failures. It thoroughly established compensation, and caused extremely irregular and also intermittent pulses to become perfectly regular, in cases where digitalis had previously failed. He has never found strophanthus to cause the heart to beat irregularly, or to make the pulse more rapid in action, even when given in very large and continued doses, as is repeatedly observed with large doses of digitalis; neither is it cumulative in its action. The addition of nux vomica seems to accelerate and aid the therapeutical effects of strophanthus hispidus.

Prof. W. H. Thomson, of New York (*Med. Record*, May 19, 1888), considers that in strophanthus hispidus we have received a great addition to the list of cardiac stimulants. For functional derangements, like palpitation, he knows no superior to it, and it has a particular effect to increase the power of the heart's contraction in a more regular and uniform manner than digitalis, though not so powerful. Its contraction of the systemic arteries is very much less than that of digitalis, and its effect in increasing the specific gravity of the urine in chronic Bright's disease is much greater. He has never, in fact, succeeded in this respect with any other drug as with strophanthus.

6. Strophanthin.

Dr. Thomas J. Mays, of Philadelphia (*Med. News*, Philadelphia, Oct. 22, 1887; and *Practitioner*, Dec., 1887), records two cases of disease of the heart which are especially interesting from the fact that he employed strophanthin, the active principle of strophanthus, as distinguished from the fluid preparations. The first case was that of a married woman of seventeen, who complained of pain in the back, palpitation of the heart, and pain over the cardiac area. Quinine, iron, and ammonia were

prescribed without success. On August 3rd she was put on strophanthin, $\frac{1}{64}$ th of a grain every three hours. Next day the pulse was quicker, and the same dose was given every two hours. On the 5th the pulse had fallen to 104, and the patient was much better. The frequency of the dose was increased to every one and a half hours. On the 6th she was very much improved: pulse 80, dyspnoea gone; $\frac{1}{48}$ th of a grain was then given every three hours.

The second case was one of rheumatic aortic regurgitation in a married woman of thirty-five. She came under observation on August 19th, suffering from cough, whitish, tough expectoration, and dyspnoea so marked that she was unable to lie down. She had hæmoptysis nine months before, with œdema of the lower extremities; and she was now losing flesh. Quinine, iron, and ammonia, and 5-drop doses of digitalis tincture every three hours, were successively tried with little success. Then $\frac{1}{64}$ th of a grain of strophanthin was ordered every four hours. Next day she was much better. The dyspnoea improved; she was able to lie down at night without difficulty; and the œdema of the lower extremities ultimately disappeared.

7. Comparative value of the principal cardio-vascular stimulants.

Eichhorst (*New York Med. Journ.*, Aug. 4th, 1888), in a very practical paper, makes an interesting comparison of the chief remedies employed in affections of the heart. Digitalis, he says, still holds the first place among these. It is of great practical importance that the remedy be given in conjunction with, or immediately after, alcoholic stimulants and excitants. Especially is this the case when marked cyanosis exists. Digitalis in these cases has no effect until the vagus centre is stimulated by the administration of alcohol. When a quick effect is desired, the drug in the form of powder should be employed. In certain forms of kidney disease the powder may prevent threatened attacks of uræmia. The powdered digitalis-leaves are very much increased in potency by the addition of calomel, not only in the dropsies of heart affections, but also in that occurring in emphysema, marasmus, and liver disease. The author thinks that the cumulative effect of the remedy is exaggerated. He has given it for months without noticing any such effect.

Next to digitalis, according to Eichhorst, stands strophanthus. Comparing the two, he says that digitalis is quicker and more certain in its action, but that strophanthus has the advantage in showing no tendency to cumulation, and does not seem to lose its effect by long-continued use. Eichhorst has found strophanthus

more efficacious in some cases than digitalis, especially in a case of exophthalmic goitre and in one of long-standing ascites. Sulphate of sparteine stands low in the list after the two foregoing drugs. It seems particularly applicable in cases of cardiac asthma. Next come preparations of caffeine, which have the advantage over the last-named drug from their diuretic properties. *Adonis vernalis* and *Convallaria maialis* have but very slight effect on the heart, and are uncertain diuretics. In addition, they are likely to cause nausea and vomiting.

Professor W. H. Thomson, of New York (*The Medical Record*, May 19th, 1888, p. 541), pleads for the application to cardiac therapeutics of the combination of neurotic remedies. In the dropsy of Bright's disease, where the condition of the systemic arteries is the primary cause of the anasarca, nitro-glycerine can assist the action of the digitalis, giving more than double the beneficial effect of the administration of digitalis singly. Nitro-glycerine, by its universal and prompt relaxation of the whole arterial system, makes every stroke of the ventricles, stimulated by digitalis, not only more powerful, but also far more effective, in completing the systole with a short and heart-emptying contraction. Meantime, by its action in paralysing the inhibitory action of the vagus, it ensures a more rapid diastole, and in many instances he has found the intermittency caused by digitalis to disappear as soon as the effect of the nitro-glycerine is felt. The effect of this upon the anasarca in these cases is about as complete and gratifying as any remedial operation with which he is acquainted. On the other hand, the influence of nitro-glycerine alone, as he has noted in a number of instances, is almost *nil* on the dropsy, however much it may seem to have a beneficial influence on the secretory action of the kidneys by increasing the specific gravity of the urine.

Combinations of strophanthus with nitro-glycerine give very much the same results on the circulation as the combination with digitalis does; and he often prescribes moderate doses of all three agents in chronic obstructive conditions of the systemic circulation.

S. Caffeine as a cardiac stimulant.

In the course of, or in convalescence from, measles, bronchitic or broncho-pneumonic symptoms are very common. M. Henri Huchard (*Journ. de Méd. de Paris*, June 10, 1888, p. 920; and *Practitioner*, August, 1888) wishes, however, to call attention to a much rarer condition of intense pulmonary congestion in the early eruptive stage, followed often by dilatation of the right side of the heart, asphyxia, and death. In these and similar cases,

besides dry cupping, blistering of the calves of the legs, etc., hypodermic injections of ether are sometimes used. In M. Huchard's experience it has been most salutary to use caffeine instead of ether, and for four years he has observed most satisfactory results from hypodermic injections of this drug in cases of fever or acute disease when the heart was very liable to fail or the urinary secretion to cease. In old patients whose cardiac muscle was weak, and could easily be overcome by bronchitis or pneumonia, he has considered it valuable, and more recently has used it in adynamic forms of typhoid fever, injecting by preference 2 or 3 grains, or giving 5 grains by the mouth held in solution by benzoate of sodium.

9. Oertel's system.

A highly important discussion on the treatment of chronic disease of the muscular tissue of the heart took place at the last German Congress for Internal Medicine (*Beilage zum Centralbl. f. klin. Medicin*, 1888, No. 25; and *Boston Med. and Surg. Journ.*, September 6, 1888, p. 226). Oertel strongly advocated his method of treatment of these conditions, which was fully described in the "Year-Book of Treatment" for 1884, and which consists essentially in systematic muscular exercise and limitation of the ingesta, particularly fluids. Experience has confirmed his first published opinions. The results claimed by him are thus summarised:—(1) Invariable success in the later stages of fat heart, uncomplicated by sclerosis of the coronary arteries, occurring mostly in elderly persons, with serous plethora, venous stasis, and often œdema. (2) Restoration of ruptured compensation in valvular disease, and impaired pulmonary circulation due to vertebral disease. (3) Disappearance of marked dilatation of the heart-muscle—so far as it is not compensatory—dependent on weakness of the muscle, and increase of the intracardial pressure in valvular disease. (4) As far as may be, the restoration of equilibrium between the arterial and venous systems, with relief to cyanosis, serous plethora, and an unduly watery or even œdematous condition of the tissues. (5) Relief, partial or complete, from respiratory symptoms. Further experience is needed to determine the permanency of the gains which result from this treatment. The first case reported by him ("Year-Book of Treatment" for 1884, p. 11) proves that the duration may be considerable. It is now thirteen years since treatment was begun (the loss of compensation with serious circulatory disturbances and œdema having existed for a year at that time), and the gain is perfectly maintained to-day. In compensatory hypertrophy and dilatation, in acute diseases of the heart-muscle following on

sclerosis of the coronary arteries or hæmorrhagic infarct, in myomalacia, and in aneurysm of the heart, the "dietetico-mechanic" method is contra-indicated. Oertel has employed his method at Meran, Ischl, Reichenhall, Liebenstein, Abbazia, Baden-Baden, Kreuth, and Wildbad.

Lichtheim thinks that Oertel's claims are excessive, and considers Oertel's method eminently suited to those forms of chronic heart disease arising from immoderate eating and drinking and insufficient bodily exercise. In those affections, on the other hand, which are traceable to the distending influence of excessive exertion, or other cause, Oertel's method is of no avail.

In these exertion is only to be allowed when the compensation is tolerable, and it should then be graduated. Patients of this sort must be treated much more cautiously than those with valvular disease. The administration of digitalis, strophanthus and caffeine is the proper treatment for impaired compensation; where it fails the dietetico-mechanical method does not succeed. Oertel's method may aid the drugs in removing the dropsy, but can never take their place.

Kisch agreed with Lichtheim that the chief danger in disease of the muscular structure of the heart lies in stretching the muscle. Microscopic study of the hearts of fat people and of overfed geese have convinced him that fatty degeneration of the heart muscle is long delayed in these cases, and results from the pressure exerted on the bundles of muscular fibres by the growth of fat between them. But, before any degeneration occurs, the efficiency of the cardiac contractions is impaired by the load of fat on and in the wall. In short, Oertel's treatment is applicable to only a very limited number of cases.

Fräntzel also expressed himself as in agreement with Lichtheim.

Schott, of Nauheim, has convinced himself hill-climbing is a form of exercise much better adapted to the end than the beginning of treatment; for the reason that it is difficult of control and accurate dosage.

Riegel finds it incomprehensible that the sweeping statement should be made—and it has been made repeatedly—that the dietetico-mechanical treatment is indicated in valvular disease in general. The different valvular lesions do not call for precisely the same treatment; discrimination must be exercised.

In the course of a somewhat similar discussion at the Washington meeting of the Association of American Physicians (*Medical News*, Oct. 6, 1888, p. 394) Dr. H. C. Wood said he thought that the Oertel plan of treatment when applied to a certain class of

cases was of great use, but that it is always attended with danger when the symptoms are severe. If we have a heart in which the muscular fibres are very seriously involved, we may have to deal with an organ which will give out under the strain and the symptoms become intensified. He thought the great danger of the method lies largely in the impossibility of diagnosing how far the morbid process has gone on in the particular case. The method should only be used under very careful supervision, and, with the distinct understanding, on the part of the patient, that there is a certain amount of risk in it.

Dr. Forcheimer, in closing the discussion, said the objection urged by Professor Wood is put forward by everyone. The idea of a patient with a weak heart climbing up to the top of a mountain three or four thousand feet high is something stupendous, and he would naturally expect him to drop down and die. Oertel does not wish anything like that done. He first lets his patients walk a certain distance, then farther, and so on, gradually increasing the distance in proportion to his capability. The objection to the method was, that certain observers had reported that harm had come from its use. These charges were not further specified, and we had no means of knowing that the cases on which they were based had been of the class amenable to Oertel's method, or that his ideas had been accurately carried out in regard to either diet or a strict graduation of exercise.

Eichhorst (*New York Med. Journ.*, Aug. 4, 1888) thus expresses his opinion of Oertel's system:—In all forms of cardiac weakness it is advantageous to diminish the quantity of fluid ingested: the amount of fluid allowed should always be in proportion to the quantity of urine excreted. With reference to bodily exercise one should observe the greatest caution. Violent exercise may cause over-distension of the heart, and consequent sudden death. This is especially likely to happen in cases of fatty degeneration of the heart muscle. On the other hand, in cases of retarded action of the heart, from the accumulation of subpericardial fat, methodical exercise is advantageous in freeing the heart from its mechanical burden.

10. Treatment of cardiac failure.

At the conclusion of a paper on failure of the heart in valvular disease, Dr. Mitchell Bruce (*The Practitioner*, January, 1888) states briefly the general principles of treatment.

Sound treatment rests on correct pathology and mainly on correct ætiology.

The first principle is: Do not treat cardiac disease without sufficient evidence that treatment directed to the heart is *required*.

Let us be sure that the heart is failing before we proceed to apply our remedies.

The second principle is equally clear: If the heart is really failing and treatment called for, do not apply treatment in a routine fashion. Cardiac failure is but an effect; rational treatment begins with attention to the cause. We must discover the cause of the break-down and remove it if possible.

The poor over-worked, half-starved labourer must be ordered rest and warmth and food. The sedentary free-liver requires the very opposite line of treatment; he must employ exercise, endure for a time the miseries of palpitation and breathlessness, if compensation is to be successfully restored. We treat intercurrent disease; we interdict the consumption of cardiac poisons; we remove the anæmic girl from town to the country. No doubt it is difficult and laborious to carry out this system of arranging and ordering treatment, which is personal, immediate, and specific, and therefore involves the trouble of making ourselves acquainted with the whole conditions of the patient's life.

Not until we have answered the question as to the *cause* of the cardiac failure, should we proceed to order treatment. If we have discovered that the patient suffers from menorrhagia dependent on polypus, we remove the polypus. If we find that what has been regarded as a secondary lung complication in the case, is really an independent bronchial catarrh, which calls for special climatic treatment before the heart can be relieved, we send the patient to winter on the Riviera. If the patient is the victim of the alcoholic habit, we attempt, at least, the removal of the toxic cause of cardiac mal-nutrition.

The third principle is the complement of the second: If the cause of cardiac failure be undiscoverable, or irremovable, do not hesitate to treat the *effects*. The attempt to discover and remove the cause must not be carried too far. As the end approaches in most instances of cardiac disease, when dilatation and dropsy and general visceral involvement have reached their limits, immediate relief of symptoms is our paramount duty. The same will be the case when symptoms are urgent and life is threatened at any stage, however early, in heart disease. In the face of urgent distress and impending death, it would be unjustifiable, and in the highest degree unscientific, to begin to talk of causes.

With respect to the specific cardiac and circulatory agents, digitalis, strophanthus, convallaria, they are so valuable that their employment constantly suggests itself to the practitioner, not only in cardiac failure, but in cases of compensated valvular disease. Use then becomes abuse. We shall never come to

understand the proper employment of these powerful measures until we take the trouble to ascertain in *each individual case* the circumstances of the cardiac failure for which they are prescribed.

11. Cardiac failure in fatty change.

Hogerstedt (*Petersburg med. Wochenschr.*, No. 47 and 48, 1887) advises the use of alcohol and ether in the treatment of the acute manifestations of cardiac failure due to fatty change of the myocardium. With the onset of the asthmatic paroxysm, he recommends an ice bag to the cardiac region, peripheral irritation by means of friction, and hot applications to the extremities, a glass of wine, and the subcutaneous injection of ether or whiskey. Should these measures fail, and danger of cardiac paralysis arise, then only should resort be had to digitalis. The author warns against the use of morphine, and especially of opiates. Their usefulness is slight, and they may do harm by increasing the feebleness of the heart.

12. Injections of ether in cardiac insufficiency.

Bamberger relates that in a case of fatty degeneration of the heart the hypodermic injection of several syringefuls of ether overcame the extreme dyspnoea and the oedema, and caused a profuse secretion of urine. The writer believes that in this case the ether acted directly upon the renal secretory apparatus.

13. Treatment of embryo-cardia.

M. Huchard (*Boston Med. and Surg. Journ.*, May 24, 1888, p. 531) attaches great prognostic importance to the *fœtal* character assumed by the sounds of the heart in some conditions of extreme exhaustion, such as typhoid fever. This consists in the perfect equality, as to duration, of the greater and the lesser pause, the sounds being equal and precipitate, with a striking resemblance to the ticking of a watch or the beatings of the fœtal heart. To this quality of cardiac action he gives the name of *embryo-cardia*, and regards it as a symptom of the very worst augury. It is always associated with *tachycardia* (acceleration of the pulsations), and is a sign, not only of enfeeblement of the heart, but also of a considerable fall in the arterial tension, two inseparable conditions of the collapse which often attends the later periods of typhoid fever. The treatment which he earnestly recommends in this condition consists in hypodermic injections, three or four times a day, of caffeine and ergotin. The formula is fifteen grains of ergotin and four grains of caffeine, dissolved in some suitable menstruum, and injected subcutaneously. Whenever the fœtal character of the heart sounds is perceived, this injection is, he believes, indicated. Nor would he be deterred by a cyanotic appearance of the integuments and coldness of the *extremities*.

14. Milk diet in heart disease.

Hogerstedt (*Münchener med. Wochenschr.*, July 3, 1888) recommends an absolute milk diet in fatty disease of the heart. Such a diet is unfavourable to the formation of fat. It supplies the organism with sufficient for its needs, but with a deficiency of carbo-hydrates and fat. With a continued milk-diet the signs of chronic insufficiency are made to disappear, as far as possible, and the force of the heart is increased. It is probable that the reduction of fat which affects the body also includes the heart.

The same authority (*Zeitschrift f. klin. Med.*, Band xiv. Hft. 1 u. 2) reports the success of this system of treatment in the case of a woman of thirty-four with mitral stenosis and disturbance of compensation, after digitalis and calomel had failed.

15. Angina pectoris.

At a recent meeting of the Société Médicale des Hôpitaux, M. Huchard (*La Semaine médicale*, No 29, 1888, p. 281; and *Med. Record*) related the case of a woman, aged fifty-eight, who had suffered from angina pectoris and died suddenly. Physical examination of the heart had determined the existence of aortic stenosis and insufficiency. Antipyrin and digitalis aggravated the state of this patient, who was only relieved by the employment of the iodide of potassium in large doses. *Post mortem* a dystrophic sclerosis of the myocardium was found, dilatation of the aorta, dilatation of the right coronary artery, and stenosis with obliteration of the left coronary artery. This is the 110th case of angina pectoris in which there was found after death stenosis with obliteration of one of the coronary arteries. This case proved once more the efficacy of the iodide treatment which M. Huchard has so long employed in angina pectoris. What creates the danger is not the pain, not the paroxysm of angina pectoris in itself—it is the ischemia of the myocardium and arterial hypertension. To combat these, recourse must be had first to the iodides and afterwards to nitro-glycerine.

16. Treatment of angina pectoris.

Liegeois (*Med. Times*, Philadelphia, Sept. 1, 1888; and *Gazette Méd. de Nantes*) objects to the use of pyridine and of antipyrin during the access of angina pectoris, because these agents are vaso-constrictors, capable of accentuating the anginal symptoms. He recommends, during the first half of each month, the iodides in doses of 4 to 45 grains, and during the second half of the month 2 to 12 drops, three to six times daily, of the one per cent. alcoholic solution of nitro-glycerine. This regimen should last from one to three years. These agents lessen vascular pressure, and facilitate the interstitial circulation of the heart, while the

iodides cause resolution of the lesions of endarteritis or periarteritis if not too deeply rooted. Under this treatment the mortality has dropped from 90 to 40 per cent. *Functional* or vaso-constrictive angina, from anæmia of the myocardium, should be treated with nitrite of amyl during the paroxysm, nitro-glycerine afterwards. The iodides should be used in the angina due to *tobacco*; recent clinical researches having established that latent sclerotic myocarditis is not uncommon in smokers.

Angina from *hyperæmia of the cardiac plexus*, in rheumatism or gout, calls for revulsives over the joints and salicylate of sodium internally, tempered by morphine injections or by a little nitro-glycerine.

Energetic revulsion at the level of the aorta, with morphine injections, constitutes the best treatment of *neuristie* angina, followed by the iodides. *Neurotic* angina, during its access, when it is neuralgic and only neuralgic, justifies the injection of morphine, followed by hydrotherapy; and if the pain is provoked by gastric troubles, milk diet, bitters, lavage, and evacuates, to prevent a return.

17. Treatment of palpitation.

According to Dr. B. W. Richardson (*The Asclepiad*, 1887, p. 101), the treatment of palpitation is moral, hygienic, and medicinal, and the value of these methods stands in the order in which they are named:—

(1) *Moral*.—In the moral treatment, the grand point is to impress the sufferer with the confidence that there is no instant danger from the seizure, for palpitation is fed by fear. A gentle persuasion toward quietness, *a firm assurance that the seizure will very soon pass away, and the best help of an encouraging kind is supplied.*

(2) *Hygienic*.—This includes the removal of all possible causes of excitement, worry, and exhaustion, mental or physical, insistence on regular habits; moderate outdoor exercise; daily free ablution in water, just sufficiently warm not to create a shock, or leave a sense of chilliness with brisk friction; a carefully arranged diet; complete abstinence from tea, coffee, tobacco, and alcohol in every shape; the avoidance of readings, amusements, and pastimes which keenly affect the emotional faculties, for whatever makes the sufferer hold his breath with wonder or anxiety is bad as bad can be, such as exciting novels, plays, exercises, and games of chance, whilst good, pleasant, steady mental work is not harmless merely, but useful.

(3) *Medicinal*.—For the actual palpitation digitalis is the only remedy he has found of any positive service, and it combines well

with remedies which have a tendency to promote quickly the cutaneous and renal excretions. He usually prescribes the tincture of digitalis in five or ten minim doses, with half a fluid drachm of nitric ether and 2 fluid drachms of the liquor ammonii acetatis. In instances where there has been prolonged sleeplessness, with palpitation, he has combined morphia in full doses with digitalis with good effect, adding the narcotic dose to the formula just given.

18. Dangers of blistering in cardiac disease.

Professor Jaccoud, of Paris (*Journ. de Méd. de Paris*, Sept. 2, 1888, p. 251), calls the special attention of practitioners to the contra-indications to the employment of flying blisters in certain cases of disease of the heart. The important point, according to this distinguished authority, is to ascertain the state of the kidneys in these subjects. In case there be discovered in the urine even the smallest trace of albumen, the use of blisters to the præcordium ought to be rigorously proscribed. Neglect of this rule has led to the unwitting aggravation of the patient in many instances. Sometimes ignorance has been the cause, sometimes imperfect testing, at other times culpable temerity—which has made light of the presence of albumen whilst a blister was being prescribed. It is easy to substitute iodine paint to the præcordium if cantharides be contra-indicated.

19. Aspiration in suppurative pericarditis.

Dr. Edwin T. Doubleday (*New York Med. Journ.*, Sep. 1, 1888) reports a case of apparently idiopathic purulent pericarditis, in which he removed fifty-one ounces of pus by aspiration at one time, and in the course of thirty-four days no less than seventeen pints in all. He believes that in cases of pericarditis where there are distant and muffled heart-sounds, with a weak and rapid pulse and dyspnoea, an exploratory puncture should be performed with a hypodermic needle; that, if pus is present, the pericardium should be thoroughly aspirated; and that if, after two aspirations, the pus reaccumulates, an operation should be performed to establish drainage, and the cavity be washed out, if this be deemed expedient. There is a risk of converting a serous into a purulent inflammation even when the best antiseptic precautions are taken.

Where drainage or washing out of the pericardium is employed, it would be well to prevent the pressure of the air upon the heart by the use of a rubber bulb, with a valve opening outward, on the end of the drainage-tube, or by keeping an aspirator attached to the end of the tube and occasionally turning the ratchet, so as to keep up a slight vacuum.

20. Treatment of exophthalmic goitre.

Professor Jaccoud, of Paris (*Journ. de Méd. de Paris*, Aug. 26, 1888, p. 225), gives the following succinct account of the treatment of Graves's disease:—(1) *Hygienic treatment*.—Quiet life in the country, avoidance of excitement; milk diet, if the heart is not enfeebled; ordinary diet, with wine and even coffee, if the cardiac contractions are weak. (2) *Medicinal treatment*.—In the first place, certain drugs are contra-indicated in every instance: to wit, the iodides of potassium and sodium, which increase the respiratory excitement consequent on the cardiac acceleration. As for digitalis, when the heart has lost contractile force, it may be ordered with reason and advantage; but when the contractility of the myocardium is intact, digitalis leads to dangerous aggravation of the symptoms. (3) Of the *systems* employed in exophthalmic goitre, M. Jaccoud prefers the arsenious acid and bromide of potassium method. Night and morning 0.001 milligramme of arsenious acid is ordered to be taken at meal times; and between meals 2 to 4 grammes of the bromide. In mild cases the arsenic may be omitted. Another useful system is that of Friedreich, which consists in the prolonged administration of sulphate of quinine. Electrical treatment is necessarily uncertain, for it is impossible to confine the application of the current to the parts of the nervous system indicated, so intimate are the anatomical connections. Hydro-therapeutics may be useful in some cases as an adjuvant; it is dangerous if the heart or lungs be the seat of organic disease.

21. Electricity in Graves's disease.

Dr. H. Pelzer (*Brit. Med. Journ.*, Oct. 27, 1888) reports a case of Graves's disease in which the symptoms all disappeared under the use of electricity. The patient was a widow, aged 42, who had suffered from palpitation for about a year. Exophthalmos existed to a slight degree when she came under observation in October, 1887. She grew worse under treatment by iron, digitalis, ergot, and cold to the præcordia. In December all drugs were stopped, and the constant current was administered daily for ten minutes, one pole being applied above the suprasternal notch, the other over the præcordia; after six weeks this was alternated with a current passed through from the spine. Improvement began five weeks after the commencement of the electrical treatment, and in six months the patient was perfectly well.

22. Faradism in Graves's disease.

Vigouroux (*Progrès méd.*, 1887, No. 43) considers the treatment of Graves's disease by means of the faradic current to be far more

beneficial than galvanisation. He applies the positive pole, 7 to 8 cm. broad, to the posterior inferior cervical region; the button-shaped negative electrode he places on the inner side of the sterno-mastoid-muscle, at the angle of the jaws; then the eyelids are touched with the same negative electrode. Thereafter the goitre, the sterno-hyoid, and sterno-thyroid are faradised with an electrode 4 cm. broad; and so the præcordia. Finally the current is reversed, and the third left intercostal space is faradised, particularly the pectoralis major, for two or three minutes. The application is made every second day for ten minutes. Improvement occurs very quickly; and cure may be complete in from six to twelve months.

23. Treatment of exophthalmic goitre by residence at high altitudes.

Stillér, of Budapest (*Centralbl. f. klin. Med.*, 1888, No. 34, p. 617), records two instances of the successful treatment of Graves's disease, with pronounced cardiac failure, by mountain residence. The results are the more remarkable that it is a generally accepted doctrine with those who have had practical experience of the treatment of diseases of the chest by high altitudes, that the method is contra-indicated in cases of uncompensated disease of the heart. The first of the two cases may be cited in illustration. It was that of a married woman, mother of nine children, who had suffered from Graves's disease since 1870, and been variously treated with electricity, change of air, baths, etc., with little benefit. Both ventricles were enlarged, with systolic mitral murmur. In 1874, during residence at a height of 1,000 metres, the pulse fell from the usual 120 to 70, and the goitre and protosis almost disappeared; and this experience was repeated, the symptoms returning in the intervals as often as the patient came home. In 1879 dropsy of the integuments and serous cavities, as well as albuminuria, supervened and increased, digitalis failing to give relief. She was now sent with great difficulty and in the greatest danger to the mountains; and once more she returned without a trace of dropsy or of Graves's disease, in the course of two months. The dropsy has never returned; but during the next few years the patient suffered from cerebral embolism and attacks of cardiac failure, from which she again recovered by temporary residence in the mountains.

Success so striking as this in two instances appears to justify further trials of the method, opposed though it be in principle to our present views, the truth being that our knowledge is still very imperfect both of the pathology of exophthalmic goitre and of the action of residence at high altitudes.

24. Iodide of potassium with antipyrin in aneurysm.

At a recent meeting of the Academy of Medicine, Dr. Dujardin-Beaumetz read a note for Professor Germain Sée on the treatment of aneurysm. The most important portion of the communication, from a practical point of view, was that which related to the simultaneous employment of antipyrin with iodide of potassium. According to Professor Sée, antipyrin, far from having, as believed by certain medical men, a pernicious influence on the heart, has, on the contrary, the most remarkable effects on the central organ of the circulation. It calms the impulse of the heart, which is generally exaggerated in aortic aneurysm, and thus it favours coagulation. Aneurysmal subjects experience sharp pains at the arch of the aorta and in the region of the heart, painful cardiac oppression, and very often sensations of anguish exactly as in angina pectoris; antipyrin dissipates all these painful and dangerous symptoms. Dr. Dujardin-Beaumetz concurs with Professor Sée as to the good effects of antipyrin, but he very much prefers phenacetin, as the former, when administered for any length of time, produces nearly always cutaneous eruptions, whereas this cannot be said of phenacetin, which never occasioned untoward symptoms, even when given for months in large doses. It is equally preferable to acetanilid, which produces cyanosis. In fine, phenacetin is not toxic. Dr. Dujardin-Beaumetz was able to administer to an animal as much as three and four grammes per kilogramme of its weight without observing any accident. The only inconvenience of phenacetin is its not being very soluble. It is necessary to administer it in wafers; but its analgesic effects are obtained with a dose of half the amount of that of antipyrin. Both Dujardin-Beaumetz and Sée condemn all surgical interference in the treatment of aneurysms of the aorta.

25. Iodides in aneurysm.

M. Huchard regards the iodides as not only having a modifying action on the arterial walls, but also, and especially, acting as depressors of the vascular tension. He uses iodide of sodium, which is, in his opinion, just as active as the potassium salt, is better supported by the stomach, is more assimilable, and does not, as the potassium salt, cause toxic effects on the heart and general system, by means of the renal insufficiency to which all patients suffering from arterial affections are exposed. Huchard uses the following formula:

Distilled water	...	...	300 grams.
Iodide of sodium	...	...	20 "
Extract of opium	...	...	·05 centigram.
Mix.			

Take from 2 to 4 or even 5 tablespoonfuls a day, before eating, in a little beer (to mask the taste). Continue this during twenty to twenty-five days every month.

Dr. Dyson, of Sheffield, reports (*Med. Press*, January 25, 1888, p. 83) a case of aneurysm of the aorta benefited by treatment consisting of an ordinary liberal diet, scrupulous rest in bed, and the administration of iodide of potassium in increasing doses—up to fifteen grains three times daily. The pain in the neck is much diminished, pain and tenderness over the tumour are nearly gone, pulsation is much less in quantity and distribution, and feels like the jog of a solidified body, the tumour is much less distinct, the patient has gained flesh considerably. There is no history of syphilis, the probable cause of the aneurysm being strain.

Other cases of successful treatment of aneurysm with iodide of potassium are recorded by Dr. Schultz, of Vernon, Indiana (*Med. News*, Feb. 11, 1888, p. 150), and by Dr. R. N. Taylor (*The American Practitioner and News*, April 14, 1888, p. 225).

After a study of twenty-four cases M. Germain Sée (*Gazette Hebdomadaire de Méd. et Chir.*, August 17, 1888) concludes that iodides are the best treatment for aortic aneurysm. They have a definite action in lessening the dyspnœa, by liquefying the catarrhal products directly. They reduce pulmonary congestion, diminish venous stasis, and contract the walls of the tumour. Further, they relieve the pain, and exert a beneficial influence on aphonia and paralysis of the vocal cords. Thus iodides diminish the permanent sense of oppression, the laryngeal dyspnœa, and the neuralgic pains—three of the worst symptoms of aneurysm. M. Sée also contends (*Journ. of American Med. Assoc.*, Oct. 6, 1888, p. 489) with respect to the particular iodide to be used in aortic aneurysm, that the iodide of sodium treatment is theoretical, and has not the good results of treatment by iodide of potassium, which is much superior to iodide of sodium in diseases of the heart and blood-vessels. In small doses the potash salts act on the muscular-motor system. They are toxic only when used subcutaneously in large doses. Even in doses of ten or fifteen grammes a day, iodide of potassium is not toxic, and any ill effects must be attributed to the iodine rather than to the potassium.

DISEASES OF THE LUNGS AND ORGANS OF RESPIRATION.

By E. MARKHAM SKERRITT, M.D., F.R.C.P.,

*Senior Physician to the Bristol General Hospital, and Lecturer on Medicine in the
Bristol Medical School.*

1. Treatment of bronchial asthma.

Dr. C. T. Williams (*Internat. Journ.*, 1888, ii. 129) contributes an exhaustive paper on this subject. He believes in the "nervomuscular" origin of asthma, which is a neurosis of the pulmonary plexus. The aim of treatment is to (1) counteract the tendency to asthma; (2) allay the actual spasm.

(1) *The tendency to asthma*.—According to Hyde Salter, 80 per cent. of all cases are traceable to previous bronchial inflammation, which probably causes swelling of the bronchial glands, from which pressure on the vagi and their branches may result. To their effect on such glands is probably due the wonderful efficacy of *iodides* in asthma. The potassium salt should be given in doses of from 8 to 15 grains three times a day, or the sodium salt in 5-grain doses. Mineral waters containing iodine, such as those of Woodhall, Purton, or Kreuznach, act similarly, but more slowly. The indications for the iodides are: the absence of catarrh or bronchitis, the existence of a well-marked neurotic element, and the presence of the physical signs of enlargement of the bronchial glands. *Arsenic* is often advantageously combined with iodides.

(2) *The actual attack* is best treated by antispasmodics:

(a) *Stimulant*, such as alcohol, coffee, spiritus ætheris (in drachm doses), nitrite of amyl.

(b) *Sedative*, such as belladonna and stramonium. These are much more effective. They act best when given by the stomach. The following is a useful formula:

R	Potass. iodid.	3ij.—5iij.	} Dose, half an ounce in water three times a day.
	Tr. stramon.	...	...	5ij.—5iij.
	Syr. scill.	...	...	3j.
	Ext. glycyrrhiz.	...	...	5j.
	Aq. ad	...	...	5viij.

Together with a pill of extract of stramonium (gr. $\frac{1}{2}$) or belladonna (gr. $\frac{1}{4}$) at night.

Chloral (20 to 30 grains at the commencement of an attack) is one of the most useful and safest of sedatives.

Inhalations of chloroform (Martindale's 10-drop capsules) or ether, or iodide of ethyl (from 3 to 5 or 10 drops), are useful in a severe attack.

Morphia hypodermically (gr. $\frac{1}{4}$), or *atropia* (gr. $\frac{1}{60}$), is very serviceable at the height of the paroxysm.

Rectal medication.—Suppositories of morphia or belladonna often do good.

Powders, cigarettes, and tablets.—The best are Himrod's cure (lobelia, stramonium, tea, and nitre), Green Mountain cure (the same), Senier's powder, Savory and Moore's tablets, and the following powder, of the Brompton Hospital Pharmacopœia:

R	Pulv. stramon...	...	...	...	...	3iv.
	Pulv. anisi	...	...	...	...	3ij.
	Potass. nitrat...	...	...	...	...	3ij.
	Pulv. tabaci	...	...	...	...	gr. v.

Of cigarettes, Espie's and Joy's (all contain much stramonium and lobelia).

Ethereal tincture of lobelia (one drachm every four hours) is very useful.

Bromides are of less value than iodides.

Aero-therapeutics.—Compressed air almost always does good. It lessens the severity of the attacks, and increases the interval between them; the great relief being due to diminution of emphysema. It is useful in pure neurotic asthma, as well as where catarrh also exists; and it is contra-indicated by valvular disease, dilatation, or fatty degeneration of the heart, or atheroma of the arteries.

Dietary.—Two meat meals daily, and besides only liquids with bread, etc. Black coffee is better than tea. The patient should go to bed with digestion completed.

Climate.—The most favourable is one affording dry air, few trees (unless firs), a dry, permeable soil, and often a smoky atmosphere. Bournemouth, Hyères, Cimiez, and Teneriffe, are suitable, especially Hyères. The Riviera is too stimulating. A winter on the Nile sometimes does much good. Cases without emphysema have done well at high altitudes (St. Moritz, Davos).

2. Pyridin in asthma and dyspnoea.

Dr. W. Releman (*Brit. Med. Journ.*, 1888, i. 491) states that pyridin is an energetic anti-asthmatic, and is chiefly useful in asthma of nervous and cardiac origin. In nineteen cases of dyspnoea due to different lesions of the heart and lungs, good

results were always obtained. In emphysema it is merely palliative, the benefit lasting from eight to twelve hours. (For cautions, see "Year-Book" for 1888, p. 19, § 3.)

3. The nitrites in asthma and bronchitis.

Prof. T. R. Fraser (*Internat. Journ.*, October, 1887, p. 393) adduces evidence to show that these substances control bronchial spasm in a marked degree, and by their effect in relieving asthma go to prove the truth of the theory that this disease is due to spasmodic contraction of the tubes. The conclusion arrived at from a number of experiments is that the nitrites of amyl, ethyl, and sodium, and nitro-glycerine, produce the same effect by the stomach as do the volatile of these nitrites by inhalation; but that the effects are greatly prolonged in the former case.

In *bronchitis*, in forty-eight observations the nitrites removed every vestige of rhonchus or sibilus for varying periods of time; in ten others lessened them; and in only three had very slight or no effect. The associated dyspnoea disappeared in proportion to the effect of the remedies on the physical signs. Therefore the rhonchi and sibili in bronchitis, and the dyspnoea associated with them, are due to contraction of the bronchial muscles, which the nitrites overcome. Their effect is more transient than in asthma, because the cause, the inflammation, is more permanent; but their administration every three or four hours is usually enough.

The nitrite of sodium and nitro-glycerine are preferable, but only because easily given by the stomach or hypodermically in accurate doses; whereas the nitrites of amyl and ethyl are very unstable, and also require alcohol to dissolve them.

4. The treatment of bronchitis.

(From a leading article in the *Therapeutic Gazette*, 1888, p. 242.)

Chloroform is a most useful remedy in cough; and in nervous patients the best expectorant mixture is often one of pure narcotics. Very useful is a mixture of whisky, paregoric, and glycerine (of each ʒij.) and chloroform (℥ 30), in teaspoonful doses as needed.

Potassium citrate advantageously replaces the older depressing expectorants; and in the first stage of bronchitis the following mixture is of the greatest use:

R	Potass. citrat. ...	...	...	...	...	3j.
	Succ. limon. ...	...	...	...	...	ʒiiss.
	Syr. ipecac. ...	...	...	...	...	ʒss.
	Tr. opii camph. ...	...	...	...	...	ʒiij.
	Syrup. ad ...	...	...	...	...	ʒiij.

Dose (for a robust man), a dessert-spoonful every two hours.

Ammonium chloride is very valuable in acute bronchitis when free secretion has once been established, and sometimes in securing secretion. It should be given every two hours, or even hourly: from 30 to 60 grains daily, in capsules, followed by water; or thus:

R	Ammon. chlorid.	...	...	}	āā. ʒiss.
	Ext. glycyrrhiz.	...	...
	Glycerin.	...	...	}	ʒss.
	Mucilag. acaciae	...	...
	Syrupi	...	...	}	ʒij.
	Aq. ...	...	...
				}	āā. q. s. ad ʒiij.

Dose, a dessert-spoonful every two hours.

Oil of eucalyptus, terebene, oil of sandal-wood, and occasionally oil of cubeb and copaiba (all in capsules), are also useful later in bronchitis.

5. Terebene in bronchorrhœa.

Dr. Martin (*Lancet*, 1888, i. 680) has obtained immediate, progressive, and persistent good results from the administration of pure terebene, in doses of 10 minims, with mucilage of tragacanth (ʒj.), spirit of chloroform (m̄x.), and water (ʒj.).

6. Helenine in bronchial catarrh.

M. Greffier (*L'Union Médical*, July, 1888) states that in daily doses of from 30 to 50 centigrammes this drug causes lessening of amount and improvement in character of the sputa, and increase in the quantity of the urine.

7. Hydrogen sulphide in chronic bronchitis and asthma.

Dr. Battesti (*Lond. Med. Rec.*, 15th Oct., 1887) has obtained the best results in the above conditions, without the production of the least disgust or irritation of stomach, by the administration of hydrogen sulphide in the following way: Take 1 gramme of sodium monosulphide, and distilled water 500 grammes; one drachm of this solution contains 1 centigramme of the monosulphide, and may be given once or twice a day, on an empty stomach. As $\frac{1}{4}$ litre of carbonic acid will decompose 1 gramme of monosulphide, the patient takes a teaspoonful of the sulphurous solution, and immediately after a soup-spoonful of Rivière's potion, or a glass of seltzer water.

8. Syrup of tar in bronchitis and winter cough.

Dr. W. Murrell (*Brit. Med. Journ.*, 1888, i. 463) recommends the syrupus picis liquidæ of the United States Pharmacopœia. The dose is 2 to 4 drachms every three hours, or oftener. It may be flavoured with syrup of Virginian prune, and the addition of apomorphia (6 minims of the 2 per cent. solution of the British

Pharmacopœia) increases its effect. Cough is relieved and expectoration made easier; and patients often sleep well even the first night of the treatment.

9. Treatment of chronic bronchitis of the aged.

Dr. Wyss (*Lond. Med. Record*, 20th March, 1888) has found the following of special value:—

(1) *Naphthalin* ($C_{10}H_8$), a product of coal tar, an energetic expectorant and stimulant. It is best given in medicated pastilles (each containing from $1\frac{1}{2}$ to 8 grains) three times daily, or volatilised by steam as an inhalation. It must be used with great care, as it irritates the kidneys, may cause naphthalinic cataract, and in animals has produced emaciation and even arrest of development.

(2) *Terpine* ($C_{10}H_{16} \cdot 2H_2O + aq.$), very useful as an expectorant, is given in doses of from 3 to 16 grains or more, in pill, three times daily, with meals. It has been known to cause gastrointestinal irritation.

(3) *Terpinol* ($C_{20}H_{16}O$) is an oily, colourless liquid, chiefly eliminated by the lungs, liquefying the bronchial secretions. It may be given in daily doses of from 8 to 16 grains, in pills or capsules, and is perfectly harmless.

(4) *Lippia Mexicana* (a verbenacea), as a concentrated tincture, is a most potent expectorant and sedative in bronchial irritation with violent attacks of cough, uniformly giving rapid relief (France).

(5) *Menthol* ($C_{10}H_{20}O$), the camphor of mint, is an excellent expectorant. As an inhalation it strikingly facilitates and diminishes expectoration, and allays cough. (For its administration Dr. Wyss has devised an apparatus like the Turkish narghilé, which is made by Penfold, of Geneva, at a cost of five francs.)

10. The terebinthines in diseases of the respiratory mucous tracts.

Dr. Prosser James (*Lancet*, 1888, i. 463) has had good results with the following remedies:

(1) *Oleum pini pumilionis* (essential oil of the mountain pine) may be given as an inhalation, a few drops in a respirator, or from 10 to 20 drops in a steam inhaler, or internally in doses of from 1 to 5 drops on sugar, in lozenges, or in capsules. It is a mild stimulant, expectorant, and disinfectant, and is useful in chronic bronchitis, bronchiectasis, bronchorrhœa, and some states of phthisis. It must be employed with care when disease of the urinary passages exists.

(2) *Terpine hydrate* acts similarly to the other terebinthines, but is tasteless and odourless. In small doses it is best given in

pills of 2 grains every three or four hours ; but in wafer-papers if in larger and less frequent doses. In bronchitis it acts as a stimulant, and checks cough and secretion. Full doses sometimes restrain the copious sputa of phthisis. It is also useful in hæmoptysis. Large doses may affect the kidneys, and in animals have produced hæmaturia.

11. Oxalate of cerium in cough.

Dr. Hobart Cheesman (*New York Med. Record*, 2nd June, 1888) states that an experience of nine years has proved the efficacy of this drug in the cough of phthisis in all stages, but especially the earlier, in laryngeal cough of any origin, in the vomiting of laryngeal and pulmonary phthisis, in asthma, whooping-cough, and measles, and in cough of obscure origin. Most effectual in chronic cough, it often moderates that of acute bronchitis. Beyond a sensation of dryness of mouth and throat, no ill effects result from doses of even 20 grains several times daily. Occasionally moderate drowsiness is produced. Oxalate of cerium is best given dry, on an empty stomach, in fairly large doses, at longish intervals. Five grains, increased if necessary to 10 or more, should be given in the morning, at night, or both night and morning, with intervening doses as required.

12. Carbonic acid in dyspnœa and cough.

Dr. Weill (*Brit. Med. Journ.*, 1888, i. 601), on the strength of Brown-Séquard's statement that inhalation of carbonic acid causes anæsthesia of the larynx, has used this method in dyspnœa and cough, and finds that the symptoms are much relieved, whatever the cause. In phthisis the results are especially good.

M. Linossier (*Lyon Médical*) confirms these observations, and says that the dyspnœa and cough of phthisis are quickly relieved even by inhaling the gas given off from an effervescing mixture of bicarbonate of soda and tartaric acid.

13. Caffeïn in pulmonary diseases.

Dr. de Gempt (*Berl. klin. Wochens.*, Nos. 25 and 26, 1888) calls attention to the use of the natro-salicylate of caffeïn in acute pneumonia, when heart failure is threatening, or in cases where the heart from any cause is weak from the outset. The frequency of pulse and respiration are diminished, arterial tension is increased, and fever is lessened. If injected subcutaneously the drug acts more rapidly. In atelectatic and hypostatic conditions of lung, and in emphysema and asthma, this remedy is also useful.

14. Potassium iodide in broncho-pneumonia.

Zinnis (*Lancet*, 1888, i. 241) has found potassium iodide of much value if given in doses of from seven to fifteen grains from

the commencement of the attack; but it is contra-indicated in measles and whooping-cough.

15. Ice in the broncho-pneumonia of children.

Dr. Angel Money (*Lancet*, 1888, i. 1071) has met with marked success from the use of ice in all cases of broncho-pneumonia, no matter what the cause; and the younger the child, the more striking is the effect. In a child under one year, one ice-bag is placed on the head. In severe cases, two ice-bags may be applied to the head, and one over the seat of chief consolidation in the lung. The treatment must be regulated by the rectal temperature. The strength of the cardiac and respiratory centres and of the nervous and muscular systems is maintained, the duration of the attack is shortened, and convalescence is more rapid.

16. The treatment of rheumatic pneumonia.

Dr. W. B. Cheadle (*Lancet*, 1888, i. 861) records cases of pneumonia occurring in the course of acute rheumatism in association with pericarditis, and differing from ordinary lobar pneumonia in that the left lung is always first affected, cough and sputa are absent, crepitation is less abundant, and resolution takes place by lysis. In such cases cardiac depressants, such as salicylate of soda and aconite, should be avoided; and salicin, or better, quinine, should be given instead.

17. Salol in pneumonia, pleurisy, and phthisis.

Ricklin (*Lancet*, 1887, ii. 777) concludes from a number of observations that salol has no advantage in these affections over salicylic acid or antipyrin.

18. The surgical treatment of pulmonary abscess.

Drs. Spillmann and Haushalter (*Revue de Médecine*, August, 1888) record nine cases of abscess following pneumonia, seven of which were successfully treated by operation. They lay down the following rules:—

1. Before operation, the position of the abscess must be determined as accurately as possible, and especially by exploratory puncture.

2. As a rule, a pulmonary abscess should not be opened during the course of acute pneumonia.

3. Before the abscess is opened, it is well to excite pleuritic adhesions if these do not already exist. This may be done by resection of a rib and suture of the two pleural surfaces, or by means of the actual cautery. According to Rüneberg, however, the absence of adhesions does not contra-indicate operation.

4. The abscess is best reached by resecting a rib and piercing the lung with the thermo-cautery.

5. Free drainage is essential; antiseptic injections are best avoided, dry dressings being preferable.

Dr. W. Strange (*Brit. Med. Journ.*, 1887, ii. 1145) records a case where the symptoms and signs of a pulmonary abscess existed four months after the probable lodging of the fang of a tooth in the right lung. Pus was found by means of an aspirator-needle, and a large curved trochar was introduced along its track for eight inches upwards and forwards from the ninth space posteriorly towards the fifth in front. A drainage-tube was introduced through the cannula, and antiseptic dressings were applied. The cavity was syringed with sanitas once or twice a week. The tube was withdrawn on the thirty-second day after the operation, and the patient went out well on the fifty-fifth. Here there were probably no pleural adhesions, as the abscess lay deep, and there were physical signs of healthy tissue over it; and yet no pus or air escaped into the pleural cavity.

Mr. J. B. Okell (*Lancet*, 1888, i. 622) operated successfully on a case of lung abscess from pleuro-pneumonia, four months after the attack. An aspirator-needle was inserted just below the angle of the right scapula into the cavity; and with this as a guide the rib was resected. The lung was then cut through until the abscess was freely opened, and a half-inch drainage-tube was inserted. Wood-wool dressing was used. Recovery was completed in six weeks.

Dr. Quincke (*Berl. klin. Wochenschr.*, Nos. 19, 1887, and 18, 1888) relates four cases of pulmonary abscess treated by operation.

CASE 1.—Chronic abscess in lower lobe of left lung, from acute pneumonia two years previously. The ribs were resected and the abscess opened. Result, recovery with chronic fistula.

CASE 2.—Iodine was injected into the pleural cavity to excite adhesions, and pain and friction-sound followed. The adhesions, however, gave way soon after the abscess was opened, and death occurred from empyema in three weeks.

CASE 3.—After incision, the eighth and ninth ribs were exposed by the use of chloride of zinc paste; they were then resected, and next day chloride of zinc was applied to the bottom of the wound. After a week, a capillary thread was introduced, along which pus escaped. The canal thus formed was gradually widened with the thermo-cautery, till a drainage-tube could be inserted. Result, complete recovery.

CASE 4.—An incision was made over the ninth space, and chloride of zinc was frequently applied during eighteen days before the ninth rib, now bare, was resected. No pus could now

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... which tends to cure by exciting reaction.

the sticking of the pleural surfaces together.

by the Greenville when opening of the chest. A sufficiently large piece of the pleura is preserved of a rib, a corresponding section of the costal pleura will indicate the overlapping the previous ones. It is inserted. The pleura is then inserted. It is necessary to wait until the pneumonia may result if matter is not removed. The pleura owing to the absence of

... 1887, ii 1333, preter-

4. The percentage of consumption by residence at
the ...

The results are (1) *General*—and (2) *Local*—

... greatly improved,
... 17-02. Total per cent,
... (arrested in 44 per cent.);

per cent.; arrested, 63;
improved, 24 per cent.
ed. 57-62 per cent. (4000)

Conclusions :—

1. That prolonged residence at high altitudes causes great improvement in most phthisical patients, and complete and more or less permanent arrest of disease in a considerable proportion.

2. That patients must be free from pyrexia and all acute symptoms, and must possess lung-surface sufficient for adequate respiration in the rarefied air.

3. That the climate seems to promote change in the lungs, either favourable or adverse, and to oppose quiescence.

4. That enlargement of thorax, hypertrophy of healthy lung-tissue, and emphysema around the tubercular lesions, are produced, with slowing of the pulse and respiration.

5. That the arrest of disease is probably partly due to pressure on the tubercular masses, owing to the increasing bulk of the surrounding tissue.

6. That general improvement accompanies the above local changes, and is shown by cessation of symptoms, and gain of weight and strength.

7. That age influences the result, while sex does not.

8. That heredity and family predisposition specially indicate this treatment.

9. That the climate is useful in hæmorrhagic phthisis, and that hæmoptysis rarely occurs.

10. That arrest of phthisis most often occurs in early cases, but benefit is also derived in more chronic.

11. That the special effects are common to all mountain ranges of 5,000 feet and upwards.

12. That to ensure full benefit six months' residence is needed; and possibly one or two years in chronic and extensive disease.

13. That mountain climates are also beneficial in imperfect thoracic and pulmonary development, chronic pneumonia without bronchiectasis, chronic pleurisy with non-expansion of lung, spasmodic asthma without emphysema, and anæmia.

14. That they are contra-indicated in—

(a) Phthisis with double cavities, with or without pyrexia

(b) Phthisis where the pulmonary surface is hardly sufficient for respiration at low levels

(c) Catarrhal phthisis

(d) F

(h) Affections of the brain and spinal cord, and hyper-sensibility of the nervous system.

(i) Where patients are old, and where they are too feeble to take exercise.

Dr. Hermann Weber stated that of 106 cases in his own practice treated at high altitudes, 38 were cured, 42 improved, 16 remained stationary, and 10 deteriorated. Of 70 in the first stage, 36 were cured, 28 improved, 11 stationary, and 6 deteriorated. Of 32 in the second stage, 2 were cured, 13 improved, 11 stationary, and 6 deteriorated. Of 4 in the third stage, 1 was improved, 1 stationary, and 2 deteriorated. Weight was gained in 58 cases, unchanged in 40, and lost in 8. He held that equally good results could be obtained at low levels by systematic medical and dietetic treatment, as at Falkerstein, near Frankfort (altitude 2,000 feet), as proved by Dettweiler's statistics.

Dr. de Haviland Hall stated that in his experience cases of laryngeal phthisis did badly at high altitudes.

Dr. Pollock held that results equally good could be obtained by medical and hygienic treatment in London, and pointed out that just those cases were benefited at high altitudes which did well at home. Cases of congestion and fever were always the worst, and these high altitudes did not suit.

Dr. Tucker Wise maintained that the improvement at high altitudes was far greater than could be obtained elsewhere. He attached much importance to the asepticity of the air.

Dr. Ewart supported Dr. Williams's conclusions.

Dr. Huggard held that high altitudes gave the best results, largely owing to the rarity of the atmosphere. Arterial tension was lowered, and hence, perhaps, the freedom from hæmoptysis. When hæmorrhage did occur, it was usually due to too sudden arrival at great heights, and was then of the kind known to balloonists.

Dr. Quain firmly believed that as much good could be got at home or at low levels. The constitutional state was the chief factor in determining recovery.

Dr. Williams, in reply, held that high altitudes gave by far the best results, as shown in the arrest of the disease (*i.e.* total disappearance of physical signs and restoration of general health), which did not happen, or only very rarely, elsewhere. Laryngeal phthisis was a contra-indication.

Dr. Tucker Wise (*Brit. Med. Journ.*, 1887, ii. 990) gives a table showing that out of 23 cases of phthisis, all signs of disease disappeared in 3, great improvement took place in 14, some improvement in 5, and in only one was there no improvement.

Dr. John Lowe (*Lancet*, 1888, ii. 513) gives his experience of the effect of high altitudes in his own case. With a strong family history of phthisis, marked physical signs developed, and bacilli were abundant in the sputa. He stayed at Davos from August to January 1st, then went to Wiesen till May, and returned home with the disease completely arrested.

21. The climate of Colorado in phthisis.

Dr. M. Charteris (*Lancet*, 1887, ii. 1006) considers that this climate is specially adapted to—

- (1) Early phthisis, or where there is hereditary tendency to it.
- (2) Hæmorrhagic phthisis.
- (3) The second stage of phthisis, when there is no evidence of rapid disintegration.

- (4) Chronic pleurisy, when the lung does not expand after removal of the fluid; and chronic pneumonia, when the consolidation persists.

Complete recovery does not occur except in incipient phthisis; only a drying-up of the tubercular deposit, which would again become active if the patient returned to a variable climate. He must therefore live permanently at a high altitude.

Colorado is contra-indicated in heart disease, chronic bronchitis, emphysema, or where, with phthisis in the first two stages, there are nervous irritability and sleeplessness, or affection of the kidneys exists.

Dr. Charles Denison, of Denver, Colorado (*Brit. Med. Journ.*, 1888, ii. 703), concludes that the preferable climate for phthisis in the United States varies from 1,500 feet in the north in winter to 10,000 feet elevation in the south in summer. The contra-indications to an otherwise preferable high altitude are: the coldest season of the year, intensifying the effect of altitude; advanced age, making acclimatisation difficult; an excitable temperament, causing irritability and sometimes wakefulness (more often met with in women); valvular heart-lesions with rapid action; marked emphysema; pneumo-thorax and hydro-pneumo-thorax; active pneumonia of existing hæmoptysis; high pyrexia; extensive implication of lung, so that the spirometrical record is diminished by more than one half; and softening, if with marked pyrexia, or in patients with much tendency to hæmorrhage.

22. The value of inhalations in the treatment of lung disease.

(Abstract of a discussion at the annual meeting of the British Medical Association at Glasgow. *Brit. Med. Journ.*, 1888, ii. 700.)

Dr. C. T. Williams, who opened the discussion, classified the methods of inhalation as follows:

(1) *Inhalation of gases*, such as oxygen, air (condensed or rarefied), or vapours of substances volatile at a low temperature, *e.g.* ether, nitrite of amyl. The complete physiological effect can thus be produced, but there must be no admixture of watery fluids. This class are very useful, probably because they consist of substances that are readily absorbed by the lungs and thus enter the circulation.

(2) *Moist warm inhalations*, medicated agents conveyed to the air-passages in steam or watery vapour. The disadvantage is the moisture, which in most lung diseases the expired air contains in excess. Most of the vapour quickly condenses, and is conveyed outwards by ciliary motion, and probably but very little of the medicinal agent reaches the air-passages. Steam is useful in acute bronchitis, laryngitis, and croup; but in diseases of the parenchyma of the lung these inhalations are useless.

(3) *Dry fuming inhalations*, vapours produced by the burning of certain powders, as Himrod's cure, or the vapour cones of the Chemical Carbon Company, or by the smoking of cigarettes. This method is effective, volatilisation is certain, and patients inspire the vapour with ease; but the effect is not nearly so speedy or certain as when the same remedies are given by the stomach.

(4) *Atomised (hand-ball) sprays*, used at a low temperature. These sometimes cause hæmoptysis; as a rule, do not penetrate much beyond the fauces and pharynx; and therefore are chiefly useful in affections of these parts. A perchloride of iron spray is serviceable in hæmoptysis.

(5) *Respirators containing medicinal agents*, by which the inspired air is impregnated with carbolic acid, creasote, etc. The objection to all is that they interfere with the freedom of respiration. Dr. Williams's experience of this group has been "far from fortunate." Carbolic acid has been of most use in quieting cough. Experiments showed that inhaled iodine was not absorbed, while turpentine was; and in three cases the irritation of iodine inhalations caused hæmoptysis.

Conclusions.

(1) That the success of inhalations depends principally upon the easy convertibility into vapour of the substances used.

(2) That consequently bodies which are volatiliised at ordinary temperatures are more readily absorbed by the lungs than bodies which have to undergo combustion before conversion into gases.

(3) That all moist inhalations are but slowly absorbed by the lungs, and enter the circulation in small quantities, and in some cases not at all; the slow rate of absorption contrasting strongly with the rapidity of the gastric absorption of the same medicines.

(4) That medicated inhalations are much more useful in affections of the pharynx, larynx, and larger bronchi than in those of the alveoli and lung parenchyma.

(5) That antiseptic respirators, while they lessen cough and expectoration, exercise no lasting influence upon the lung lesion, and often interfere with the freedom of respiratory movement.

Dr. Lindsay held that there was no satisfactory proof that the tubercle bacillus could be destroyed by any inhalation, and was of opinion that the free use of the inhaler interfered with the open-air life of the patient.

Dr. Ireland had seen great benefit in rheumatism and chronic bronchitis from the use of terebinthinate vapours at the baths at Die, in High Dauphiny, and also permanent improvement in early phthisis from the same treatment.

Dr. Sinclair Coghill had been disappointed in the results of inhalations. Cough and expectoration are relieved, and in bronchiectasis and purulent bronchitis the amount and fœtor of the discharges are lessened; and in the resolution of pneumonia inhalations are of use when the sputa are purulent.

Dr. Denison (of Denver, Colorado) pointed out that, owing to contraction of the affected portions of lung-tissue and dilatation of the sound parts, medicaments inhaled went to the healthy parts almost entirely.

23. Hydrofluoric acid inhalations in phthisis.

Dr. Garcin (*Lancet*, 1887, ii. 788) communicated to the French Academy of Sciences the result of his treatment of phthisis by inhalations of this acid mixed with air. The patients were placed for an hour daily in a room measuring 6 cubic metres, the air of which was saturated with hydrofluoric acid (by passing a current of air, by the aid of a pump, into a guttapercha jar containing 300 grammes of distilled water and 100 grammes of the acid). Of 100 patients, no improvement took place in 14, improvement in 41, complete recovery in 35, and death in 10. In the successful cases cough rapidly diminished and then ceased, dyspnoea lessened, and in a few days the bacilli disappeared from the sputa. After from fifteen to twenty sittings pain was much relieved, if not removed.

The Committee of the Academy of Sciences appointed to report upon this subject concluded (*Lancet*, 1887, ii. 1094) that inhalations of hydrofluoric acid had a marked therapeutic effect when phthisis was not too far advanced, and that the treatment was free from danger and easy of application.

Dr. de Giacomi (*Correspondenz-Blatt für Schweizer Aerzte*, March 1st, 1888, p. 142) uses 100 grammes of hydrofluoric acid, heated

with 300 grammes of water in an open leaden vessel by a spirit lamp, and the patients sit round this for an hour daily, inhaling the fumes; out of 8 cases, no good was done in 6, in 1 there was temporary benefit, and in 1 there was a striking improvement in all the symptoms after the first sitting, which Dr. de Giacomi hesitates to ascribe to the treatment.

Dr. Collon in two advanced cases, with high fever and much emaciation, obtained no benefit.

Dr. Jarjavay (*Bull. Gén. de Thérap.*, March 15th, 1888) concludes that inhalations of hydrofluoric acid do not cure phthisis, but do much good in the way of a general improvement of symptoms.

Bardet uses a mixture of from 15 to 20 or 30 per cent. of the acid of commerce, the patients having two sittings daily, of forty minutes each.

Dr. Gager (*Lancet*, 1888, ii. 581) prepares the gas in an apparatus which he has devised (to be had of Herr Siebert, of Vienna), and introduces it into a specially prepared chamber. The volume of air impregnated with the acid is at first from 80 to 100 litres per head during the daily sitting of one hour, afterwards increased to from 100 to 600 litres. Of seventeen cases, in five the bacilli disappeared from the sputa, and marked improvement of symptoms occurred; in seven there was distinct improvement in physical signs; in twelve the weight increased, but without definite relation to the general condition. Of three cases with pyrexia, one lost it entirely, in the second it was lessened, and in the third was not affected. In one case where night-sweats existed, these ceased. In seven cases the vital capacity was increased. In five there was no improvement, and one very advanced case died. In two cases somewhat severe inflammation of larynx was set up, showing that the treatment is contra-indicated in laryngeal phthisis.

Various mechanical appliances have been designed for the administration of these inhalations. They consist essentially of a reservoir to contain the vapour, a mask to fit over the mouth and nose, and a hand-ball air-pump.

M. Grancher (at the Paris Société de Biologie, June 2nd, 1888; see *Brit. Med. Journ.*, 1888, ii. 451) detailed a series of experiments showing that the vapour of hydrofluoric acid had no action on the ulterior development of experimental tuberculosis. Eight animals were inoculated with cultivations of tubercle diluted with sterilised water, and four with cultivations exposed to the vapour of the acid. The latter died within four days of the former.

M. Daremberg has obtained no good results with hydrofluoric

acid. The sputa of patients treated with the inhalations are never acid, showing that the penetrating power of the acid is insignificant.

24. The inhalation of hot air in phthisis.

Dr. Wiegert (*Lancet*, 1888, ii. 628), finding that the tubercular bacillus outside the body dies at a temperature of 41° C., and is adversely affected by one of 38° C., has constructed an apparatus for the inhalation of dry air, heated at first from 40° to 60° C., and then raised to 80°, to be used for three or four hours daily for a month. Patients bear this treatment very well, the only discomfort being hyperæmia and dryness of the mucous membranes. The general effects were remarkable; flesh and strength improved, dulness and râles diminished; and the bacilli, before very numerous, rapidly lessened in number, and finally disappeared.

Dr. Halter himself inhaled, and made patients inhale, dry air heated to 190° C., with satisfactory results.

25. Aniline in phthisis (Kremianski's method).

Dr. Bertalero (*Lancet*, 1888, i. 436) has obtained marked good in eight cases, where Siegel's spray was used for the aniline inhalations, and the drug was also given internally.

Dr. M. P. Seslavin (*Caucasian Med. Soc.*, No. 23, 1888; see *Lancet*, 1888, ii. 388) has tried this treatment in numerous cases. In no instance was there any improvement in any respect; but the disease advanced, and the toxic effect of aniline on the heart was often produced. (See also "Year-Book" for 1888, p. 36, § 17.)

26. Creasote in phthisis.

Dr. V. T. Bushuyeff (*Vrakh, St. Petersburg*; see *Lancet*, 1888, i. 187) usually gives three drops of creasote in twenty-four hours in wine, glycerine, fish-oil, capsules, or pills. Twenty cases were treated, for periods of from one to six months. Ten in the first stage were markedly benefited; of six in the second, four improved; of four in the third stage, none improved. In the favourable cases cough and sputa diminished, fever and night-sweats lessened or disappeared, and weight increased. Five of the first-stage cases may be said to have been cured, as the dulness, bronchial breathing, and râles disappeared. One patient in the last stage took by mistake six drops instead of three for three days; diarrhœa, which was present, stopped, general dropsy set in, and the urine contained blood and much albumen. All these symptoms rapidly disappeared on a milk diet.

Dr. P. Bogdanovitch (*Meditzinskoë Obozrenië*; see *Brit. Med. Journ.*, 1888, i. 548) gives the result of his experience in his own case. Suffering from pulmonary and laryngeal phthisis for about

two years, he took creasote in doses of $\frac{1}{2}$ grain four or five times a day without effect. He then took more, beginning with 4 grains daily, and in two months reaching 44 grains. Improvement was marked—fever disappeared in a week; the cough, sputum, and dyspnœa much diminished; laryngeal spasm, before present, disappeared. The bacilli in the sputa, however, were just as numerous as ever. To produce effect, a dose of about 5 grains, in capsule, after food, must be taken four times a day.

Hoffmann (*Berl. klin. Wochens.*, Dec. 26, 1887, p. 985) considers that the benefit derived from creasote is proportionate to the dose. He administers it in gentian, one part of creasote to two of tincture of gentian, and of this mixture from ten to twenty, twenty-five, or thirty drops are taken three times a day. The best results are obtained in cases with hæmorrhage (the treatment being suspended during actual hæmoptysis), or with caseous or fibroid degeneration. In miliary and intestinal tuberculosis the remedy is useless.

Dr. Lasnière (*Union Méd.*; see *Brit. Med. Journ.*, 1888, i. 1360) states that nausea and vomiting are avoided if the following formula is used:—Creasote 5 centigrammes, tolu balsam $7\frac{1}{2}$, purified Norway pitch $7\frac{1}{2}$; to make one capsule. Four of these should be taken morning and night, increasing the dose to twelve daily. They should be taken with meals, and washed down with water.

Dr. T. Stachiewicz (*Lancet*, 1888, i. 1260) has had no good results with creasote. In one case fever set in under treatment, and cough and expectoration increased.

27. Intrapulmonary injections of creasote in phthisis.

Dr. Rosenbusch (*Przegląd Lekarski*, Feb. 4 and 11, 1888; see *Lancet*, 1888, i. 643) has obtained excellent results from this method. At intervals of two or three days, 8 minims of a 3 per cent. solution of creasote in almond oil are injected into each of two spots in the affected lung; the patient is told not to breathe deeply, and to lie still for a few minutes. If the injection is not deep enough, pleuritic pain may be caused. Under this treatment cough almost disappears, and the sputa lessen. If the case is not far advanced, weight increases, and night-sweats disappear, and often dull areas clear up. The temperature falls from five to eight hours after the injection, the fall continuing at first for ten or twelve hours; and ultimately pyrexia disappears.

28. Guaiacol as a substitute for creasote in phthisis.

Dr. H. Sahli (*Lancet*, 1887, ii. 1287) has advantageously used guaiacol instead of creasote, of which it is the chief constituent;

but it has a more agreeable taste and smell. It moderates cough, makes expectoration easier, and improves the appetite and general condition. In some bed-ridden patients with pyrexia, vomiting was caused, and in others diarrhoea. One or two parts of guaiacol may be dissolved in 20 of spirit and 180 of water; and of this, one or two drachms in a glass of water should be taken two or three times a day, after meals. Or it may be dissolved in cod-liver oil, which entirely disguises the smell; and thus larger doses can be taken of this than of the watery solution.

29. Rectal injections of hydrogen sulphide in phthisis.

(*Brit. Med. Journ.*, 1887, ii. 843.) At a discussion on "Bergeon's treatment" of phthisis by the Association of American Physicians, a generally unfavourable opinion was expressed. In fifty or sixty cases treated there was no marked improvement. The strongest advocates of this method only claimed that it lessened cough, fever, and night-sweats; and in many cases it had to be abandoned in consequence of the colic, diarrhoea, vomiting, and collapse induced.

Dr. W. Pepper had given these enemata in 34 cases, but in 10 was compelled to stop them. In the remainder, the treatment was continued over an average of twenty-five days, with the following result: cough was not much influenced, sputa diminished in 4, weight (in 28 cases) increased in 8, remained stationary in 6, and diminished in 6; out of 16 cases, the temperature was lowered in 4, but in none did it remain normal; and night-sweats were checked in 8.

Dr. Forchheimer adopted "control" experiments, by which he found that patients treated by rectal injections of air (which caused no inconvenience), did almost as well as those placed under Bergeon's method.

Dr. Gabriel Pavai (*Centralbl. f. die Gesamte Thérap.*, Dec., 1887) concludes that Bergeon's method has no influence on the tubercle bacillus, and that it does not check the invasion of fresh lung-tissue. It appears to lessen cough, fever, and night-sweats, and to improve the appetite and digestion; but it affords no special advantage over other methods of treatment.

Professor Enrico de Renzi (*Centralbl. f. die Gesamte Thérap.*, Feb., 1888) states that these rectal injections have a favourable influence upon cough and expectoration, but none upon the pulmonary lesion.

MM. Arnozan and Ferré (*Lancet*, 1887, ii. 727) reported at the Toulouse Congress the following experiments. Three rabbits treated with rectal injections of hydrogen sulphide gas died, two

within a short time, and the third after rapid and progressive emaciation. In all, the liver-tissue contained no sugar. Hence they conclude that this gas when injected arrests the glycogenic function of the liver. (See also "Year-Book" for 1888, p. 29, § 14.)

30. Hydrogen sulphide inhalations in phthisis.

Dr. Anton Karika (*Wiener Mediz. Presse*; see *Brit. Med. Journ.*, 1888, i. 492) has used these inhalations with the following results: in several cases the first inhalation gave relief, cough and dyspnoea diminished, expectoration became easier, and the patients were refreshed and invigorated. In others improvement came later, and in others not at all. No radical cure resulted in any case; and it was noted that only the first few inhalations did good, after the eighth or ninth no effect being produced. Further, if a relapse, as of cough, came on, the inhalation was useless. The best results were met with in cases of rapid breaking-down of tubercular foci, in inflammatory irritation of the walls of cavities, in acute or chronic inflammation of the bronchial mucous membrane, and in paroxysmal cough. Good was done in about 60 per cent., and there were no ill effects. This method is less objectionable than Bergeon's, and as effectual. (See also "Year-Book" for 1888, p. 35, § 16).

31. Sulphurous acid inhalations in phthisis.

Dr. Ley (*Journal de Médecine de Paris*; see *Lancet*, 1887, ii. 1094) says that the therapeutic dose of sulphurous acid is an atmosphere of from $\frac{1}{30000}$ to $\frac{1}{100000}$ of the acid—obtained by burning 6 grammes of sulphur for each cubic metre of room-space for the first three days, and five grammes afterwards (the walls being saturated). The patient should not enter the room till ten or twelve hours after the combustion, which should always take place in a well-aired chamber. He advises this treatment in torpid phthisis, febrile symptoms being a contra-indication.

Dr. Dariex (*Bull. Gén. de Thérap.*, February 29th, 1888) states that under inhalations of sulphurous acid in phthisis, weight and appetite increase; expectoration, dyspnoea, and night-sweats diminish, and râles become fewer. The bacilli persist, but are less numerous. He concludes that the acid is not a specific for tuberculosis, but that it retards the changes in the lung and lessens the severity of the disease.

32. Antipyrin in the fever of phthisis.

Dr. T. Stachiewicz (*Wiadomosci Lekarski*, Nos. 5 and 7, 1887) from an analysis of twelve cases concludes that antipyrin is by far the best antipyretic in phthisis. In emaciated and weak patients the dose must be only from $\frac{1}{16}$ to $\frac{1}{8}$ of a gramme, as

otherwise profuse sweats and rigors may be induced. The effect is shown within an hour, reaches its maximum in three or four hours, and lasts six or eight hours. When the general condition is fairly good, the dose should be from $\frac{1}{4}$ to $\frac{1}{2}$ gramme. The effect is produced in from one to two hours, and lasts from three to five.

33. Morrhual in phthisis.

Chazeaud (*Lancet*, 1887, ii. 880) speaks highly of the value of morrhual, the extract of cod-liver oil. Appetite improves under its use, digestion is regulated, weight and strength increase, cough is lessened or cured. Nausea and vomiting are prevented by giving morrhual in capsules. From two to eight daily may be taken (8 capsules = 40 grammes of brown cod-liver oil). It sometimes causes acne like iodides.

34. The treatment of the muscular atrophy of phthisis.

Bompar (*Revue de Thérap.*, April 15th, 1888) recommends for the treatment of atrophic degeneration of the respiratory muscles in phthisis, systematic gymnastic movements which bring the affected muscles into play. Faradisation is also desirable.

35. The removal of the expired air of phthisical patients.

Dr. Brown-Séquard (*Lancet*, 1887, ii. 1195) at the Academy of Sciences exhibited a bell-shaped apparatus to be placed at the head of the patient's bed, and communicating by a tube with a chimney opening into the outer air. A draught is kept up in the chimney by a burning gas-jet, lamp, or candle. In this way the expired air is drawn away and does not mix with the air of the room.

36. Subcutaneous injections of eucalyptol and iodoform in phthisis.

M. Edmond Habert (*Revue de Thérap.*, March 15, 1888) considers these injections useful in ordinary phthisis with bronchial catarrh, and also in emphysema and chronic bronchitis. Cough and sputa are lessened, sleep and appetite restored, and the general condition is much improved; but the bacilli are just as numerous. In advanced phthisis but little benefit results.

37. Intrapulmonary injections of carbolic acid in phthisis.

M. Dujardin Beaumetz (*Brit. Med. Journ.*, 1888, i. 555) uses a syringe containing 5 grammes, and injects a 2 per cent. solution of carbolic acid (previously dissolved in glycerine) anteriorly below the clavicle. The number of punctures varies with the case; but if too numerous, carbolic acid poisoning may occur. In

a large proportion of cases appetite returns, the patient can leave his bed and walk about, cough and expectoration lessen, and night-sweats often cease.

38. Tannin in phthisis.

Dr. de Viti Demarco (*Lancet*, 1888, ii. 437) states that large doses of tannin reduce the temperature in phthisis, and sometimes produce a most beneficial effect on the course of the disease. A pill of $7\frac{1}{2}$ grains of tannin and $\frac{1}{4}$ drop of creasote may be given every four hours.

Prof. Andrea Ceccherelli (*Brit. Med. Journ.*, 1888, i. 756) holds that tannin is a powerful antiseptic, with a specific power of destroying the tubercle bacillus. Injections of these bacilli are rendered harmless if tannin is injected simultaneously or given internally daily for some time. The results in cases of phthisis have been satisfactory.

39. Antipyrin in hæmoptysis.

Dr. M. Byvakevitch (*Meditzinskoe Obozrenië*, 1887, No. 5, p. 520; see *Brit. Med. Journ.*, 1887, ii. 1349) has obtained excellent results from this drug in pulmonary hæmorrhage of all kinds: in ten cases of phthisis, in bronchiectasis, in hæmoptysis from heart disease, and in that from injury to the chest. The best formula is:

R	Antipyrin	...	...	...	...	...	3ss.
	Essent. menth. pip.	...	...	...	...	...	℥xv.
	Aq. dest. ad	...	...	...	...	...	℥iv.

Dose, half an ounce every two or three hours. In no case were more than two doses needed to entirely arrest the hæmorrhage, even when the daily loss had been as much as 2 lbs. Ordinary remedies had previously been tried without success.

Dr. Olikoff (*Russkaya Meditzina*; see *Lancet*, 1887, ii. 880) recommends a solution of 90 grs. in 6 ounces of water as an inhalation; five or six inspirations through the inhaler being taken every half-hour or hour. Hæmoptysis at once diminishes, and rapidly ceases.

40. Iodoform in the hæmoptysis of phthisis.

MM. Chauvin and Jovisenne (*Le Progrès Médical*, May 19th, 1888) conclude, from the use of this drug in fourteen cases of phthisis, that it is a sure and speedy hæmostatic in both sanguineous sputa and severe hæmoptysis; that recurrence of hæmorrhage is rare; that it succeeds when ergotin fails; and that the small dose of $\frac{3}{4}$ grain in pill three times a day is sufficient.

41. Terpene hydrate in hæmoptysis.

See § 10, page 24.

42. Iodoform as a germicide.

Rovsing (*Lancet*, 1888, i. 139) has proved that the growth of tubercle is not retarded by iodoform. On inoculating the two eyes of a rabbit with pure tubercle and with iodoformed tubercle respectively, he invariably found that the eye inoculated with iodoformed tubercle was affected before the other, the irritation of the iodoform leading to the formation of a more suitable soil for the growth of tubercle.

Dr. J. A. Jefferies (*Internat. Journ.*, 1888, i. 15) concludes from an elaborate series of experiments that iodoform has no direct action as a germicide, but that its presence retards the growth of bacteria and lessens the foul odours of putrefaction.

43. The action of disinfectants on the tubercle bacillus.

MM. Grancher and de Gennes (*Soc. de Méd. Publ. et d'Hygiène Profess.*, Feb. 22nd, 1888) tested the effect of the following substances upon the bacillus of tubercle: carbolic acid, 5 per cent.; potassium, 5 per cent.; sulphate of copper, 5 per cent.; chloride of zinc, 5 per cent.; corrosive sublimate, 1 per cent. The last solution alone proved fatal to the bacillus.

44. Spontaneous cure in phthisis.

Dr. Vibert (*Lancet*, 1888, ii. 598) derives from the register of necropsies at the Paris Morgue the following statistics as to the frequency of the occurrence of phthisis and its curability. In 131 persons between the ages of twenty-two and fifty-five, all of whom died violent or sudden deaths, evidence of phthisis existed in twenty-five; and in seventeen of these (or 68 per cent.) it was in a cretaceous or fibrous state, *i.e.* cured. These observations are worthy of remembrance when the apparent effects of new methods of treatment in phthisis are under consideration.

45. Cocaine in pleurisy.

Dr. H. C. March (*Brit. Med. Journ.*, 1888, ii. 76) injects hypodermically at the site of pain $\frac{1}{2}$ or $\frac{1}{4}$ of a grain of cocaine, and repeats the dose once or twice a day. Pain is much relieved, and the tendency to effusion is checked; while no ill effects follow.

46. Siphonage and aspiration in pleuritic effusion.

Furbringer (*Berl. klin. Wochens.*, 1888, Nos. 12—14), from observations on a series of twenty-five cases, concludes that in 10 per cent. the siphon fails to remove half the fluid present, and often but little or no fluid can be obtained without aspiration. Where siphonage alone is used, recovery is apt to be very tedious; and the author concludes that in many cases aspiration hastens recovery as siphonage will not.

47. Perflation in empyema.

Dr. C. E. Oldman (*Lancet*, 1888, i. 1191) records a case where an empyema was freely opened six months after its onset; later, the ribs were resected, but without success; and five and a quarter years after the first operation the treatment by perflation was begun, air being daily injected which had passed through a solution of carbolic acid (1 in 10). There was little change till the ninth day, when a large quantity of very offensive pus escaped; and by the eighteenth day the patient was cured. During the first injection urgent symptoms of dyspnoea and syncope occurred, probably because the opening was not large enough to permit escape of pus in proportion to entry of air.

48. Compressed air in pleurisy.

Dr. Szohner (*Lancet*, 1888, ii. 83) narrates instances of pleuritic effusion in which the treatment by compressed air seemed most beneficial. Two sittings daily were ordered. In one case of fistulous empyema, which had been getting steadily worse, complete recovery took place within two months under this method.

49. Thoracoplasty for chronic empyema.

Abstract of a discussion at the Medical Society of London. (*Lancet*, 1888, i. 261 and 276.)

Mr. A. Pearce-Gould advocated this operation (Estländer's operation) in very chronic fistulous empyema. Success depends upon the removal of the whole of the unyielding bony wall of the cavity; and therefore the operation must be specially planned for each case. The vertical and the antero-posterior extent of the cavity are first determined by enlargement of the existing sinus. A single vertical incision through the soft parts is better than the usual flap. As the ribs are excised the periosteum is separated with a raspator. The ribs should everywhere be removed to the full extent of the underlying cavity, except that the first rib must not be touched on account of the subclavian vessels. All the dense cicatricial tissue lining them, sometimes an inch thick, must also be cut away with scissors, so that nothing is left but a soft and easily-collapsing wall of soft tissues. Hæmorrhage, which may be severe, is controlled by forceps. After thorough irrigation with corrosive sublimate solution, the skin wound is closed with sutures, free drainage being secured. Shock is considerable, and great care in after-treatment is needed; hence the operation is contra-indicated when serious visceral disease or great exhaustion exists. If success is only partial, probably the operation has not been complete enough.

CASE 1.—A girl, aged nine, with right fistulous empyema of three years' duration. Portions of ribs had been excised twice

before, without success. Parts of the second, third, fourth, fifth, and sixth ribs were removed, with the pleura beneath, and complete cure resulted.

CASE 2.—A boy, aged nine; left empyema discharging for two years. Parts of the second, third, fourth, fifth, and sixth ribs were removed, with the underlying pleura; and ultimately only a narrow sinus two inches long was left.

CASE 3.—A boy, aged twelve; left empyema of six years' duration. The ribs from the second to the seventh were removed from their cartilages to close to the spine, and the pleura (half an inch thick) beneath; with complete success.

CASE 4.—A woman, aged twenty-five; right empyema discharging for more than three years. Portions of the ribs had previously been excised without success. The ribs were removed from the second to the ninth, 54 inches of bone in all; together with the pleura, which was nearly an inch thick. Death occurred suddenly the next day; and the heart was found pale and flabby, with a universally adherent pericardium bound down to the wall of the cavity.

Dr. de Haviland Hall thought that a more limited operation should be tried before thoracoplasty, and quoted a case where an empyema of five years' duration was cured by excision of parts of the eighth and ninth ribs.

Mr. Bloxam cited an instance where extensive removal of parts of five ribs, in two operations, was needed before a cure resulted.

Mr. R. W. Parker advised the scraping out of the pleural sac, which gave good results in children.

Mr. Pearce-Gould, in reply, would not advocate thoracoplasty except in a small residue of very chronic and otherwise incurable cases of fistulous empyema.

50. Resection of ribs in chronic empyema.

(Abstract of a discussion in the French Congress of Surgeons; *Internat. Journ.*, 1888, ii. 78.)

Rouilly divides cases of chronic empyema into five classes:—

1. Where a large cavity exists, in which the lung is permanently collapsed and bound down; here operation is unwarrantable.

2. When a large cavity exists, in which the lung, though condensed, still possesses a slight vesicular murmur. Here operation is sometimes useful.

3. Cavities from eight to twelve centimetres across are the most favourable for resection.

4. Where fistulous tracts alone exist, operation is successful if the sinus is short and straight, but less so if otherwise.

5. Moderate-sized cavities with fistulous tracts communicating with them are favourable for operation.

The general opinion was that large cavities should be let alone. Ollier pointed out that in children, if the ribs are resected too near their anterior ends their later development is interfered with, and marked thoracic deformity may result; and that, owing to the great osteogenetic tendency in children, unless the periosteum is removed secondary resection may be needed, owing to the growth of masses of new bone. Berger mentioned a case where the patient died from dyspnoea within four hours of the operation, when the seventh, eighth, and ninth ribs had been resected, probably owing to interference with the action of the diaphragm. Of 49 cases operated upon, 32 were cured.

Drs. White and Bruen (*Internat. Journ.*, 1888, ii. 78) have never seen permanent interference with the external respiratory muscles after this operation.

DISEASES OF THE NERVOUS SYSTEM.

BY JAMES ROSS, M.D., LL.D., F.R.C.P.,

Physician to the Manchester Royal Infirmary, and Joint Professor of the Practice of Medicine
in the Victoria University,

AND

ERNEST SEPTIMUS REYNOLDS, M.D. *Lond.*, M.R.C.P. *Lond.*,

Resident Medical Officer, Manchester Royal Infirmary.

1. Electrical treatment.

The past year has not been marked by any great advances in the treatment of nervous disease by electricity, but it is necessary to notice the publication of two new treatises on the subject. The first is "Medical Electricity," by Robert Bartholow, M.D., of Philadelphia, Edin., 1887, Young J. Pentland. The best chapters in this apply to the treatment of nervous disease; that on the application of electricity to surgery being scanty. The second is "Practical Electro-Therapeutics," by Wm. F. Hutchinson, M.D., pp. 247, *Philadelphia Records*, McMullen and Co. This, as the name implies, concerns itself more with the practical than with the theoretical aspects of the subject.

In addition to this, there is now published monthly (first number Jan., 1888) a journal devoted to medical electricity, entitled "L'Electrothérapie," edited by Dr. Léon Danion, with contributions from various well-known physicians, Continental, English, and American. Here is found a large store of information.

As regards special papers, there are three of some importance.

Galvanism in insanity.—Dr. Wigglesworth (*Journ. Ment. Sci.*, Oct., 1887) has tried the effects of galvanism of the head in the insane, and though his results have been somewhat uncertain, still he has recorded both improvements and cures, and he finally concludes (1) That while the use of galvanism to the head is a proceeding which is certainly not going to revolutionise the treatment of insanity, this agent is nevertheless one that is capable of doing much good in certain selected cases, and that by its judicious employment we may every now and then cure cases which would

drift into hopeless chronicity. (2) The class of cases which offers the best field for the employment of this agent is that which includes examples of mental stupor and torpor, cases which are grouped under the specific designation of melancholia attonita and so-called acute dementia.

Hydro-electric baths.—Wagner (*Deutsche Med. Zeitung*, 1888) gives his results, using preferably the bipolar arrangement. Weak currents only are necessary in general nervous disease. The pulse becomes slower, probably from direct effect on inhibitory cardiac nerves, and the method has proved useful in cardiac neuroses and angina pectoris. The bipolar faradic method was useful as a sedative, improving the sleep, appetite, and general health.

(d) *Treatment of neuralgia by cataphoresis.*

Dr. Adamkiewicz (*Deutsche Med. Wochens.*, No. 39, 1887; and *Centrabl. f. die gesammte Thérap.*, Dec., 1887) gives a series of cases of neuralgia treated successfully by the application of the anode to the painful spots. This electrode charged with chloroform was applied, and the current gradually increased to seven milliamperes, and decreased again to zero. The treatment should at first be used two or three times a day, then every day, and gradually discontinued as the attacks of pain cease. The depth of the nerve affected is important, as if this is great it cannot be reached except by currents of high intensity, which are inadmissible. Thus the treatment is better in thin than in fat patients. Professor Hirt, of Breslau, has also used this method successfully.

2. Massage.

One book, entitled "A Manual of Treatment by Massage and Methodical Muscle Exercise," by Joseph Schreiber, M.D., translated by Walter Mendelson, Edinb., Young J. Pentland, was published in 1887. This is, however, rather a treatise on gymnastics as a mode of treatment than on massage proper.

Dr. Murrell's "Massage as a Mode of Treatment" has reached its third edition.

Dr. G. Hünerfauth (F. C. W. Fogel, Leipsic) has written "The Handbook of Massage, for Students and Doctors," with plates, and copious references.

Dr. A. Symons Eccles, in the *Practitioner*, Nov., 1887, deals with the treatment of *Sciatica by massage, rest, and position*, giving notes of fifteen cases, some due to neuritis, and others being more neuralgic in nature. He swings the affected limb, enveloped in flannel, in a Salter's cradle, uses rubbing and kneading for eight to fifteen minutes daily, and gradually employs passive movement of the limb. He thinks that in these cases

there is distension of the blood-vessels and lymphatics of the epineurium and perineurium, causing pressure on the nervi nervorum.

Dr. Playfair (*Lancet*, Jan., 1888, p. 8) draws attention to the limitations of the so-called "Weir-Mitchell" treatment, and says that it is unsuitable in any form of organic disease, so much so that by its effects a diagnosis between organic and functional disease may be often arrived at. Also that it should never be used in marked cases of mental disease. Lastly, that it must be thoroughly carried out, or not at all.

[We have, however, seen several cases of so-called acute dementia of girls recover rapidly under this treatment.—Rep.]

Dr. Douglas Graham (*Journ. Amer. Med. Assoc.*, Jan. 7, 1888), in an article on local massage in neurasthenia, says that massage supplies the place of active exercise of nerve and muscle, which neurasthenics cannot avail themselves of. He recommends it strongly in cases of uneasy dorsal and lumbar sensations from cerebral overwork, in which it induces sleep, and also locally in writers' cramp and the laryngeal cramp of singers. He prefers the method of deep pressure without friction.

Dr. Weissenberg, of Kolberg (*Deutsche Med. Zeitung*, No. 43), advocates the use of massage along with Sol baths (Solbäder). The latter increase the metamorphosis of nitrogenous tissue and cause a more rapid formation of healthy tissue. He has found massage very efficacious in neuralgia of the ulnaris and of the trigeminus in sciatica and in writers' and pianists' cramp.

3. Migraine.

(a) *Antipyrin*.—That this drug is of great use in this disease is evidenced by the numerous cases of cures which are reported.

Mr. Bokenham (*Pract.*, Feb., 1888, p. 99) has had great success by small doses of 3 or 4 grains given as soon as the first symptoms appear, and repeated in half an hour.

Dr. Forsbrook (*Lancet*, Dec. 10, 1887) has given antipyrin in 100 cases of migraine with wonderfully good results. He prefers a dose of 15 grains repeated every twenty minutes for three doses if necessary, but rarely more than two doses are required. He also thinks that subsequent attacks are rendered less frequent and violent.

Dr. Jennings (*Lancet*, Dec. 10, 1887) also relates a case where antipyrin relieved migraine at first, but afterwards lost much of its influence.

Dr. MacAlister (*Croomian Lectures*, July, 1888) also testifies to its use in migraine.

(b) *Cannabis indica*.—Mr. Green (*Pract.*, July, 1888, p.

35) relates some cases of migraine treated successfully with this drug. The freshly-prepared alcoholic extract, $\frac{1}{3}$ grain, made into a pill, given every night and morning, is the best mode of administration, and it is necessary to persevere steadily for at least three months. The drug can be given up without the slightest effort.

(c) *Salicylates and Caffein*.—Dr. Little (*Dub. Journ. of Med. Sci.*, June, 1888, p. 489) says he has, for the last two years, directed his migrainous patients, when they awake with any feeling of headache, to take 20 grains of salicylate of soda in a wineglassful of water, made effervescent with a dessert-spoonful of granular citrate of caffeine, repeating the dose, if necessary, in two or three hours. In one case the attack was warded off for a time, but when they at last returned they were more severe than ever.

(d) *Cytisin*.—Kraepelin (*Wiener med. Wochensch.*, No. 4, 1888) has used this drug, which is the active principle of *cytissus laburnum*, on account of its power of contracting vessels. It is only useful, therefore, in paralytic migraine associated with flushing of the same side of the head, and strong pulsation of the same temporal artery. He injected $\frac{1}{20}$ th grain of the nitrate of cytisin with complete relief in half an hour. It is most useful if given early in the attack. It is useless, or even injurious, in spastic migraine.

(e) *Acids*.—Mr. Haig (*Brit. Med. Journ.*, Jan. 1888, p. 73) understands by migraine, a headache due to an excess of uric acid in the blood. He stops the excess of uric acid in the urine and in the blood by giving large doses of some mineral acid, such as thirty to sixty minims of dilute nitro-muriatic acid.

[Granting the view here taken of the pathology of migraine, it is very difficult to see how the treatment agrees with our knowledge of the physiological chemistry of uric acid.—Rep.]

(f) *Cucaine*.—Dr. Dunn (*Therap. Gaz.*, Aug., 1888, p. 516) says that he personally obtains great relief in migraine by taking $1\frac{1}{2}$ grains of cucaine.

(g) *Antifebrin*.—Hamilton (*New York Med. Journ.*, May 28, 1887) recommends this drug specially in angiospastic migraine; and Faust (*Deutsche med. Wochens.*, 1887), E. Herczel (*Centralbl. f. die med. Wissenschaft.*, 1887), Ott (*Prag. med. Wochens.*, 1887), Weinstein (*Wien. med. Blätt.*, 1887) all testify to its efficacy in migraine. The dose is from 8 to 15 grains; and usually no grave symptoms seem to occur from 40 to 50 grains taken daily.

4. Neuralgia.

The references to the treatment of this affection will be best

given when speaking of the therapeutic uses of such drugs as cocaine, antipyrin, and antifebrin (*vide infra*).

It may be here, however, mentioned that, as regards *sciatica*, Dr. Cowden (*Journ. Amer. Med. Assoc.*, 1888) has treated this disease successfully in several cases by enveloping the limb in flowers of sulphur.

5. **Cucaine.**

Prof. M. Rosenthal, of Vienna (*Wien. med. Wochens.*, 1888) has given his experimental and clinical experiences of the effects of this drug. His experiments were made on curarised dogs, but are hardly within the scope of this article. He points out that the depressive form of neurasthenia, with pains in the head and back, insomnia, pallor, small pulse, and lassitude, is relieved by increasing doses of cucaine ($\frac{1}{3}$ to 1 grain) twice daily. In three cases of *tabes dorsalis*, an injection of a 3 per cent. solution not only relieved the pain, but in about a quarter of an hour the patient felt particularly well, contrasting with the depression following the injection of morphia in such cases. After repeated injections, however, there may be a disagreeable sensation at the stomach, and aversion to food, which is best avoided by taking a mouthful of brandy after injection. Anæsthesia produced by cucaine may extend either to the centre or periphery. It had a marked effect in bulimia (probably from hyperæsthesia of the gastric vagus centres), and in nervous cardialgia. If gastric pain after food is from hyperæsthesia of the peripheral gastric nerves, cucaine again relieves. Peripheral colic pains, so common in anæmic individuals and morphinists, yield to cucaine. Nervous spermatorrhœa, and hyperæsthesia of the urethra and bladder in neurasthenia, are best treated by small local injections of a 5 per cent. solution.

Precautions in cucaine administration.—Dr. Edmunds (*Lancet*, Jun. 7, 1888), in speaking of the production of local anæsthesia by cucaine, says that it is not advisable to use a stronger solution than 5 per cent. When stronger solutions were used, the pulse became rapid and almost imperceptible; there were fainting and cardiac oppression, blue lips, restlessness amounting almost to convulsions, and dilated pupils.

6. **Local anæsthetics.**

(a) *Stenocarpine.*—This drug, otherwise called “gleditschine,” said to be obtained from the *Gleditschia tricanthus*, was mentioned in the “Year-Book of Treatment” for 1888 as a local anæsthetic. Since then, Dr. Marshall, of the University of Pennsylvania (*Philadelph. Med. News*, Oct. 29 and Nov. 5, 1887), has thoroughly examined the drug, and finds that it is a fraud. He

finds that whereas it was labelled as 2 per cent., it in reality contained as much as 6 per cent., of cocaine, this being indeed its principal ingredient.

(b) *Kava extract*.—Dr. Lewin (*Recueil d'Ophthalm.*, No. 3, 1887) discovered that the resinous extract from kava (*Pipes methysticum*) has a local anæsthetic effect similar to that of cocaine. Instilled into the eye, it produced irritation soon followed by anæsthesia. Subcutaneous injections produce insensibility of the neighbouring tissues, with inflammation.

(c) *Haya or erythrophlein*.—Dr. Lewin (*Deutsche med. Zeitung*, 1888, p. 68) has investigated this amorphous substance, finding that alcohol dissolved from it the active principle which he considers to be the same as erythrophlein, obtained from the *Erythrophleum judicale* of West Africa, which is used as an arrow-poison and also in ordeals. The solution instilled into the eye produced complete anæsthesia in fifteen minutes, which lasted for ten to twenty-four hours. Injected into the body, it slowed the pulse, and caused great debility, dyspnoea, and partial paralysis. Great anæsthesia around the point of injection was produced. M. Panas and Prof. Kaposi (*Lond. Med. Rec.*, 1888, p. 149) say it is inferior to cocaine, both as an anæsthetic and because it causes so much irritation. Moreover, Tweedy (*Lancet*, Feb. 4, 1888, p. 249) denies that Haya is an anæsthetic; and Liebreich (*Deutsche med. Wochens.*, Feb. 16, 1888) thinks it is a serpent poison.

(d) *Canadol*.—Dr. J. P. Plushkoff (*Vratch*, No. 28, 1887, p. 544) gives an account of this liquid, which he says is superior to ether, both on account of its cheapness, and because of its rapidity and constancy of action. It is obtained by the fractional distillation of American naphtha, and is used in the form of spray, freezing the integuments in thirty to ninety seconds.

(e) *Chloride of methyl*.—M. Bailly (*Bull. Méd.*, Feb. 1, 1888) finds that cotton wool saturated with this drug, made liquid under pressure and applied to the skin, produces intense cold and anæsthesia. It may also be used as a spray, and has been found efficacious in neuralgia and for localised pain.

7. Antipyrin.

Dr. L. Bonmanson (*Montpellier Méd.*, April 16, 1888) records the value of this drug in various nervous diseases. Twelve cases of migraine out of eighteen were successfully treated, and it was of distinct service in thirteen cases of neuralgia, three cases of acute sciatica, and one of lumbago.

Dr. Sarda (*Bull. Gén. de Thérap.*, May 30, 1888) has made some comparative observations with antipyrin, antifebrin, and solanine. As regards the differences between antipyrin and

antifebrin, he thinks that the former is far more serviceable for the relief of acute pains, such as are met with in articular rheumatism, neuralgia, gonorrhœal sciatica, myalgia, and migraine; but that it has less effect on long-standing pains and on motor inco-ordination. Antifebrin acts more on the motor system, and relieves better motor excitement. Solanine is best in very long-standing pains, such as those of locomotor ataxia, and wherever neuralgia depends on structural diseases, such as in gastric ulcers or neuritis. It greatly relieved a case of inveterate tic douloureux, and caused the complete subsidence of greatly exaggerated reflexes (trepidation epileptôide).

McAlister (*Croomian Lect.*, July, 1888) says that antipyrin abolishes the neuralgic pains of tabes dorsalis, of cancer, otalgia, rheumatoid arthritis, and supra-orbital neuralgia.

S. Antifebrin (acetanilide).

An excellent *résumé* of the effects of this drug, with a copious bibliography, has been written by Prof. D. J. Leech (*Med. Chron.*, vol. viii., No. 4, p. 297), from which we obtain the following facts. Experiments on animals show that it interferes with the conduction of both motor and sensory impressions, and depresses the reflex excitability of the spinal cord. As regards its therapeutic uses, Lépine first found that 8 grains relieved the lancinating pains of tabes; and this has been confirmed by P. Demiéville (*Rev. Méd. de la Suisse Rom.*, 1887, vii. 307-317) and G. Fischer (*München. med. Wochens.*, 1887, xxiv. 425-427). Demiéville has proved it to be of use in sciatica, lumbago, and in intercostal and trigeminal neuralgia.

9. Hypnotics.

During the year many new hypnotics have been tried, and the following results are recorded:—

(a) *Sulphonal*.—This new drug has been investigated by B. Fischer (*Pharm. Zeit.*, No. 32, 1888), A. Kast (*Berl. klin. Woch.*, No. 16, 1888), and G. Rabbas (*Berl. klin. Woch.*, No. 17, 1888). It was first prepared by Baumann in 1886, and chemically is diethyl-sulphon-dimethyl-methane $(CH_3)_2C(SO_2C_2H_5)_2$. Kast was led to believe, from experiments on dogs, that the cortex cerebri is the part influenced by the drug. He thinks that it is a drug which does not force sleep, but causes relaxation and rest, which, aided by desire, tends to sleep. He used it in "nervous" insomnia due to cerebral hyper-excitability, in senile insomnia and cardiac insomnia, with good effect—a dose of 15 to 45 grains causing sound sleep in one-half to two hours, lasting five to eight hours, the patients waking refreshed, with no evil consequences. It seems to act in medium doses (30 to 45 grains) more certainly than larger doses of amylene-hydrate or paraldehyde. It has no

taste or odour, and causes a longer sleep than chloral. It has been found to have good effect in excited patients, and has no bad effect on the heart. Langgard and Rabow (*Thér. Monats.*, May, 1888) and Macvie (*Med. Press and Circ.*, June, 1888, p. 606) all testify to the above results and statements.

It has also been given by Cromer (*Münch. med. Wochens.*, xxv., 1888) 407 times in the insane with good effect in 90 per cent. of the cases. Fraenkel (*Berl. klin. Wochens.*, No. 30, 1888) has also produced sound sleep by its aid in various mental conditions; but some of his patients complained of tired feelings and want of power in the limbs, and dulness in the head on the day following. Matthes (*Centralb. f. klin. Med.*, No. 40, 1888), in mentioning that his results were successful in 72 per cent. of his cases, says that the after-effects noticed occasionally were tinnitus aurium, headache, dizziness, and in two cases vomiting. Oestreicher (*Berl. klin. Wochens.*, June 18, 1888) points out that it is the dearest of the hypnotics, being about eightpence a drachm. Further references to this drug may be found in Prof. Leech's *résumé* (*Med. Chron.*, Nov., 1888, vol. ix. p. 149).

(b) *Boldin* (*Le Progrès*, Nov. 5, 1887; *Therap. Gaz.*, Jan. 16, 1888, p. 54; *Deut. med. Wochens.*, 1888, No. 16) is a glucoside contained in boldo leaves. Its hypnotic action has been principally investigated by Dr. Juranville, who considers that it far surpasses opium, chloral, and similar drugs. The sleep is similar to natural sleep, and its administration has no disadvantages. It is given in capsules or by subcutaneous injections, 1 part dissolving in 20 of water. The dose is 3 grains.

(c) *Antipyrin*.—Dr. Forrest W. Brayton (*New York Med. Rec.*, Nov. 26, 1887) says this drug often gives refreshing sleep after failure of the usual remedies, and cites a case in proof of this. He gave 6 grains of antipyrin and 2 grains of antifebrin each night in a case of delirium, the patient being asleep in one hour, this lasting for six hours, when she wakened refreshed.

(d) *Antifebrin*.—As a hypnotic this is highly extolled in insomnia in affections of the nervous system, and in that associated with febrile conditions. J. B. Kell (*New York Med. Rec.*, 1888, xxxiii. 199) gave it with good results in a case of acute alcoholism, in two doses of 10 grains. It seems from this case, that although the high temperature was lowered, still the sleep was not secondary to this, as previously the pyrexia had been reduced markedly by quinine, but without any hypnotic effect. E. Herczel (*Centralb. f. die med. Wissensch.*, Berlin, 1887, xxv. 546—551) found antifebrin useful in insomnia and general nervous irritability after operation.

(e) *Hydrate of amylene*.—This drug, first prepared by Wurtz, and investigated, as regards its hypnotic effects, by Professor Von Mering (*Thér. Monatsch.*, No. 7, 1887), has been further experimented with by Dr. Scharschmidt (*Thér. Monatsch.*, No. 9, 1887) with careful control experiments with other hypnotics. The results obtained are briefly as follows:—It is more agreeable than paraldehyde, but not so agreeable as chloral or urethan. It may be given as enema in a dose of 40 to 90 grains. The usual dose by the mouth is 30 to 60 grains. It is said to be more powerful than paraldehyde or chloral, and never produces injurious effects. It often acts very rapidly (in five to ten minutes), and has been given with good effect in many cases of mental disease, as melancholia, dementia, chronic and acute alcoholism with delirium, often acting after other hypnotics had failed. It may be safely given in heart disease, or chronic nephritis.

(f) *Hyoscine*.—R. Kobert and A. Sohrt (*Der Fortsch.*, No. 20, Oct. 20, 1887) have used this drug in maniacal conditions where other hypnotics had failed, producing sound sleep in ten to twelve minutes, of five to eight hours' duration, without bad effects. The dose was $\frac{1}{120}$ to $\frac{1}{60}$ of a grain, given hypodermically. Sohrt obtained similar results from the muriate, hydrochlorate, and hydrobromate of hyoscine, and Dr. George Thompson (*Lancet*, Feb., 1888, p. 218) confirms these statements. He used the hydrobromate of hyoscine, giving $\frac{1}{200}$ to $\frac{1}{100}$ grain, and says that in mania it is the best calnative we possess. Salgó (*Deutsch. med. Zeit.*, No. 52, 1888) thinks that for quickly soothing a violent and raving patient it is without a rival, the patient rapidly becoming as if drunk, and in about twenty minutes crouches in a corner asleep, although he can be easily roused, rapidly falling to sleep again. Pitcairn (*Brit. Med. Journ.*, July, 1888, p. 75) confirms these statements, but says it is contra-indicated in pulmonary disease, and that the antidotes for the effects of large doses are pilocarpin and caffeine.

(g) *Strychnine*.—Dr. Lauder Brunton (*Pract.*, Jan., 1888) says that this is the best treatment for the insomnia of literary persons who cannot sleep in spite of being tired. It causes no bad effects the next day; the dose given is 5 to 10 minims of tincture of nux vomica, or $\frac{1}{200}$ grain strychnine, repeated in one to two hours if necessary.

(h) *Cannabis indica*.—Dr. McConnell (*Pract.*, Feb., 1888) recommends for the insomnia of chronic cardiac and kidney disease 15 minims of the tincture of cannabis indica with 10 grains of chloral and 30 grains of bromide of potassium.

(i) *Methylal*.—Dr. H. Margigney (*Rev. Gen. de Clin. et de*

Théráp., Oct. 20, 1887) says this drug is useless in alcoholic delirium, and that in man about 75 minims is required to produce sleep. Dr. Richardson (*Asclepiad*, May, 1888) has used the drug in doses of 1 to 4 drachms in asthma, angina pectoris, colic, and tetanus, and it is given as a substitute for alcohol in treating delirium tremens.

(j) *Quinine*.—Dr. F. Ekund (*Théráp. Gaz.*, Dec. 15, 1887) draws attention to a peculiar form of insomnia met with in malarious subjects. For this he prescribes 6 to 15 grains of quinine with 16 to 30 grains of bicarbonate of soda in powder every morning. Hydropathic treatment is also serviceable, but he objects to morphia or chloral.

(k) *Hydropathy and massage*.—Dr. Eccles (*Pract.*, March, 1888) has, in an elaborate paper, recommended the trial of baths and massage for procuring sleep in certain cases. He uses a complicated form of hot bath immediately before going to bed. The patient is rapidly stripped, and the head and face douched with water at 100° F., the body being exposed to the air at 70°. Then the whole body, except the head and face, is immersed in the bath at 98°, rapidly raised to 105° to 110° F. The patient is then wrapped in blankets and put in bed, with hot bottles to the feet. The method by massage is performed by effleurage, at night, of the limbs, back, and abdomen, and a hot compress applied to the abdomen and loins. To carry out the treatment thoroughly, complete rest in bed in the recumbent position day and night for some weeks is necessary.

10. Chorea.

(a) *Arsenic*.—Sir James Sawyer (*Birm. Med. Review*, Jan., 1888) gives his experience of arsenic in chorea, and thinks that large and increasing doses are the best. To a child of ten he gives 5 minims of Fowler's solution in an ounce of water thrice daily; in three days this is increased to 10 minims; in three days more to 15 minims; and so on, until the patient is taking 35 grains (equal to about $\frac{1}{4}$ grain arsenious acid) three times a day. The movements then stop, and the drug is withdrawn for two days; and then a dose of 10 minims thrice daily is given for a few days, and then stopped entirely.

(b) *Cerebral rest*.—Dr. J. Leonard Corning (*New York Med. Rec.*, xxxiii. p. 3, 1888) tries to induce prolonged sleep in his cases of chorea by seclusion in a dark room for ten to fifteen hours at a time, and by the assistance of bromides. Arsenic and hydrotherapy, with light diet, are great aids to the treatment.

(c) *Physostigmine*.—Dr. L. Reiss (*Zeits. f. Thérapie*, Oct. 1, 1887) treated forty cases of chorea with this drug, by subcutaneous

injections of $\frac{1}{8}$ th grain once or twice daily, and by this means materially shortened the length of the disease.

(d) *Antipyrin*.—Dr. Boussi (*France Méd.*, Feb. 2, 1888) relates a case of severe chorea following scarlatina, articular rheumatism, and endocarditis, in which the choreic movements disappeared in a week by the administration of 8-grain doses of antipyrin four times daily.

Mr. Bokenham (*Pract.*, April, 1888, p. 266) has also tried antipyrin in chorea, but not with favourable results.

11. Epilepsy.

(a) *Nitro-glycerine*.—Professor Bartholow (*Philad. Med. News*, Dec., 1887) relates a case of respiratory neurosis, which he considered to be a "masked epilepsy." He treated it with 30-grain doses of bromide of sodium, three times a day, with 1 minim of a 1 per cent. solution of nitro-glycerine, together with a carefully regulated diet.

Dr. Wm. Osler (*Amer. Journ. of Nerv. and Ment. Dis.*, vol. xiii. No. 1, 1888) has used nitro-glycerine in nineteen cases of epilepsy, with only nine cases of improvement. He gave the pilules containing $\frac{1}{100}$ grain.

(b) *Antipyrin*.—Mr. Bokenham (*Pract.*, April, 1888, p. 266) publishes his results of antipyrin in epilepsy with marked aura. He gives large doses as 20 grains, thrice daily, and of his twenty cases the symptoms have been markedly relieved in the large majority. Ten grains may be administered at the commencement of the aura, to avert the fit if possible.

Dr. Fraty (*Lyon Méd.*, Feb. 12, 1888) also records the results of his treatment in twenty cases of epilepsy, and gives the following conclusions:—(1) That antipyrin possesses an influence in epilepsy, at least in some cases. (2) Its action resembles that of the alkaline bromides. (3) That doses of 40 to 120 grains must be given daily. (4) That the moderating effect, when present, is transitory, and that the attacks recur more violently than ever on the cessation of the treatment, and even during its continuance, if prolonged.

(c) *Antifebrin*.—Dr. H. N. Moyer (*Arch. de Gyn.*, July, 1888) has used this drug in five cases of epilepsy, but in only one case (5 grain doses thrice daily) was there any real improvement.

(d) *Simulo*.—Dr. Hale White (*Lancet*, March, 1888, p. 617) records some cases of epilepsy treated by this drug, which is the fruit of the *Capparis coriacea*, a member of the hyssop family. He gave 1 to 2 drachms of a tincture made from the seeds, with distinct benefit in some cases. It is a tasteless preparation.

12. Dipsomania.

Dr. Norman Kerr has written a book, entitled "Inebriety: Its Etiology, Pathology, Treatment, and Jurisprudence," to which reference may be made.

(a) *Hypnotism*.—Dr. Forel (*Münch. Med. Wochens.*, No. 26, 1888) recommends this method as a subsidiary means of treating inebriety. While hypnotised, the idea of joining a temperance society, or of taking a pledge of total abstinence, has been suggested to the patient in several cases with good results where ordinary means had failed.

(b) *Strychnine*.—Dr. Berblinger (*Russkaia Med.*, No. 38, 1887, p. 626) administered $\frac{1}{100}$ grain of strychnine hypodermically every day, giving, in all, twenty injections in a case of dipsomania with complete success. The insomnia rapidly disappeared, the appetite returned, and after the tenth injection no more craving was felt.

Dr. Korona, of Tiflis (*Proceedings of the Caucasian Med. Soc.*, Dec. 13, 1887, p. 390), has made some extensive and valuable experiments with strychnine, and has arrived at the following results:—1. In acute intoxication strychnine is completely inactive. 2. In most alcoholics, after three or four injections there was an aversion to alcohol. 3. Strychnine is the most effectual remedy for dipsomania, but it requires to be repeated in course of time. 4. It is of great service in chronic alcoholism with paralysis and neuralgic pains, and is a good hypnotic in such cases. 5. It is of slight value in alcoholism without symptoms. 6. It is not cumulative. 7. It is not impossible that the injection may also act in a psychical way.

13. Hysteria.

Dr. Louise Fiske-Bryson, in an article entitled the "Rational Treatment of Hysteria" (*New York Med. Journ.*, Nov. 19, 1887) says the treatment is not so much a matter of drugs as of mental, moral, and social management. The environment must be changed, any reflex cause removed, and the sponge bath, fresh air, early hours, systematic occupation, regular exercise, and a nutritious diet must be ordered. If there is any feeling of melancholy it is often relieved by small doses of opium or morphia, with overfeeding, and cayenne pepper with each meal and cod-liver oil afterwards. Claret, port, or Burgundy are better than malt liquors; recreation should be merry but non musical.

14. Arsenic in chronic degenerative nervous diseases.

Dr. Suckling (*Brit. Med. Journ.*, Oct 29, 1887) records a case with anomalous symptoms, most probably due to general paralysis in an early stage, with loss of the knee-jerk on one side, and optic

atrophy. He treated the case with arsenic, $\frac{1}{20}$ th grain in a pill thrice daily. In two months the improvement in walking, memory, and sight, and the tremor of the facial muscles, was most marked; and even the lost knee-jerk returned.

15. Salicin and bromide of potassium in traumatic tetanus.

Mr. Butlin (*Brit. Med. Journ.*, 1888, p. 74) records a case of this affection. After ineffectual treatment by chloral hydrate and bromide of potassium, and the patient seemed to be dying, a draught containing 20 grains of salicin and 20 grains of bromide of potassium was given and repeated every two hours during the night, and then every four hours. There was a marked improvement almost at once, and in six weeks the patient was convalescent. Mr. Butlin suggests that the profuse sweating may have had something to do with his recovery, but the germicidal action of the salicin must be remembered.

16. The treatment of locomotor ataxia.

Dr. Graupner (*Der Aertztliche Practiker*, July 2, 1888; and *Der Fortschritt*, No. 14, July 20, 1888) gives an elaborate account of the treatment of the disease. If there is any suspicion of syphilis, mercurial inunctions (1 drachm daily, until two and a half ounces have been used) should be employed, though this may at first aggravate the symptoms. This should be followed up by iodide of potassium, combined with $\frac{5}{8}$ of a grain of extract of belladonna. For the after-treatment, the springs of Nauheim (Hesse Darmstadt) and Tölz (Bavarian Alps) are recommended. If iodide of potassium disagrees, iodide of sodium may be used. Even if there is no syphilitic history, iodide of potassium is often serviceable. The lancinating pains may be relieved by nitrate of silver, antipyrin (in three doses of 30 grains each), or, perhaps better, large doses of antifebrin (8 grains, repeated in an hour). In many cases, however, morphia will be necessary. Ewald recommends, for inco-ordinate movements, subcutaneous injections of $\frac{1}{3}$ grain of salicylate of physostigmine. In torpid forms of tabes, hydropathic treatment, as at Nauheim or Kissingen, or for excitable patients, at Teplitz, Wildbad, or Gastein, is of benefit. At home, warm bran or weak sulphur baths are useful, with ointment of balm of nutmeg (ung. myristicæ), or camphorated spirit, may be applied to the spinal column. Electrical treatment to the spine by constant ascending or descending currents, or the induced current with the faradaic brush, is often of service. All excitement or over-exertion is to be avoided.

17. The treatment of Graves's disease.

Jaccoud (*Journ. de Méd. de Paris*, Aug. 26, 1888, p. 225)

gives the following treatment. The patient is to be kept quiet, preferably in the country, and free from all excitement; the diet is to be principally milk, or if the heart is weak, then ordinary diet with coffee or wine may be given. As regards medicines, he says that iodides are bad, as also is digitalis, unless the heart is weak. The best thing is to give small doses of arsenious acid with food night and morning, and during the day fairly large doses of bromide of potassium. Friedreich prefers to give long-continued doses of sulphate of quinine. Jaccoud thinks that electrical treatment is uncertain, and that hydropathy may be useful or dangerous.

DISEASES OF THE STOMACH, INTESTINES, LIVER, ETC.

BY SIR DYCE DUCKWORTH, M.D., F.R.C.P.,

Physician to, and Lecturer on Clinical Medicine at, St. Bartholomew's Hospital,

AND

ROBERT MAGUIRE, M.D., M.R.C.P.,

Physician to Out-Patients, and Joint Lecturer on Pathology, at St. Mary's Hospital,

1. Dyspepsia.

Diet.—McNaught (*Med. Chron.* viii. p. 30), in reporting a number of cases of disease of the stomach, concludes that, whatever drugs may be employed, the chief treatment of dyspepsia must be dietetic. There is often hyper-irritability of the stomach, so that slight irritants call forth an excessive secretion. Indigestible foods increase the duration of the stimulus, while easily digestible foods reduce it to a minimum, and give the organ rest. Fine division of food lessens its irritant action, and hence Arabian food, Benger's food, and such articles, are of use. Tea, coffee, and alcohol, being powerful stimulants, are inadmissible. Milk with lime-water is often useful, but is sometimes not well borne. [Too little lime-water is usually added to milk. One part should be mixed with two of milk. Two ounces is an ample quantity to give at one time.—D.D.] Starchy and fatty foods are to be avoided, because they remain a long time in the stomach, and so cause irritation. The author points out that pepsin and hydrochloric acid are very rarely absent or deficient in the gastric juice; he condemns the older ideas of the production of flatulence, acidity, etc., by fermentation, and disapproves of the treatment of such cases by hydrochloric acid and pepsin.

Action of bitters.—Reichmann (*Centr. f. Med. Wissensch.*, 1888, p. 618) has investigated the action of bitters upon the secretion of the gastric juice. The experiments were so arranged as to

ascertain, (1) the direct action of bitters on the secretion of the fasting stomach ; (2) the effect produced after their disappearance from the stomach ; (3) their action when used for some time ; and (4) their influence upon the duration and course of digestion, and upon the mechanical functions of the stomach when administered during the digestive process. The conclusions arrived at were the following :—There was no difference in the actions of the aromatic and the simple bitters. The secretion produced immediately in a fasting stomach by bitters was less in amount than that produced by distilled water. Its hydrochloric acid was deficient or absent, and its digestive action was slow. After the bitter had disappeared from the stomach the secretion was much increased, the quantity of hydrochloric acid and the digestive power being also greater. When a healthy stomach was already engaged in digestion, the administration of bitters had a prejudicial effect upon the digestive power, and upon the mechanical functions of the stomach. The amount of secretion of the digesting stomach was increased by bitters if the general secreting power was weak, unchanged if already normal ; while, if there was no acid secretion present, the bitters again had no effect. If the secretion was excessive, bitters produced a greater degree of acidity. A prolonged use of bitters had no prejudicial effect on either the healthy or the diseased stomach. It is hence recommended that bitters should be administered only in cases where the secretion of the stomach is less than normal, and that they should be given about half an hour before meals.

Salt solution.—Reichmann (*Archiv f. Exper. Pathol.*, Band xxiv. Heft 1 and 2 ; and *Med. Chron.*, vii. p. 300) shows by experiment that when solutions of common salt are brought into contact with the gastric mucous membrane, a fluid is poured out, which neutralises to a certain extent the acid of the gastric juice, and contains albumen and pepsin. The more concentrated the salt solution, the greater is the transudation of fluid, and the more completely is the gastric juice neutralised. This is a purely local action of the salt solution, and has nothing to do with its general action after absorption.

Condurango bark.—Tcheezen (*Bull. Gén. de Thérap.*, July, 1888, p. 38) has made experiments upon dogs, by means of gastric fistulæ, as to the action of condurango root upon the secretion of the digestive juices. He finds that :

1. If the dog has not fasted, no effect is produced.
2. If the dog has fasted for eighteen to twenty hours, condurango, in the form of decoction, produces an increase in the secretion of the gastric juice.

3. Condurango increases greatly the secretion of pancreatic juice, and also, though to a less extent, the secretion of bile.

The author concludes, that condurango acts more powerfully on the secretion of pancreatic juice and bile than upon that of gastric juice.

Oser (see *Lancet*, 1888, i. p. 997) finds that condurango bark in carcinoma and other diseases of the stomach has an excellent effect on the appetite, and that it relieves over-sensitiveness. In some patients it soon sets up nausea. Professor Oser still believes that the only hope of cure in cancer of the stomach, by means of drugs, lies in the possibility of a wrong diagnosis.

[The revival of the treatment of cancer of the stomach by condurango bark, first recommended by Friedreich in 1874, has, as might have been expected, come to almost naught. The trials recently made with it have, however, shown that the drug is of value in relieving catarrh and hyperæsthesia of the stomach, and may be employed with good effect in cases not only of cancer but of other gastric disorders. Additional testimony to this effect is found in Ewald's recently published book, *Die Krankheiten des Magens*.—R.M.]

Cannabis indica.—McConnell (*Practitioner*, February, 1888, p. 95), from experience in India, speaks highly of this drug in anorexia consequent upon exhausting diseases. He has found that this disorder is not always cured by acids, bitters, or nuxvomica, but is often relieved by small doses of cannabis indica (m to x of the tincture, or $\frac{1}{4}$ to $\frac{1}{2}$ gr. of the extract). The drug should be given three times a day, half an hour before meals. McConnell points out that the smokers and eaters of Indian hemp in India have, as a rule, voracious appetites.

In tropical diarrhœa it is of use in the early stages of the affection, but in the later stages it may be of avail if combined with a nightly mercurial, to remedy the functional disorder of the liver.

Carlsbad water and salts.—Jaworski has announced on several occasions that a large number of experiments upon the Carlsbad water have led him to an opinion somewhat adverse to their use. He has recently, for instance, reported that very small quantities of Carlsbad water increase the secretion of acid and of peptonising fluid from the stomach, but larger quantities destroy the digestive power, and that a course of the waters causes diminution in the secretion of acid and pepsin, and interference with the absorptive power of the mucous membrane.

Sandberg and Ewald (*Centralbl. f. Méd. Wissensch.*, 1888, p. 396) have instituted a series of investigations of this matter,

and from their experiments, which seem to have been carried out with great care, they come to the following conclusions :—

1. Carlsbad water greatly increases the stomach secretion, and also the percentage of hydrochloric acid therein contained.

2. The digestive power is not diminished by a 4 to 5 weeks' course of the waters.

3. Similarly the rennet ferment is not diminished in amount.

4. Where the acidity of the secretion is slight at the beginning of the treatment, the pepsin and rennet ferments are much increased after a time.

5. A 4 to 5 weeks' course of Carlsbad waters has no prejudicial effect upon either the acid- or pepsin-secreting power of the stomach.

6. Carlsbad water is a greater stimulant to the stomach than simple water.

7. Absorption of Carlsbad water is very rapid, and is quicker at 50° to 55° C. than at lower temperatures.

8. Bile often regurgitates into the stomach after the use of Carlsbad water, as also when ordinary water is used, and this is specially observed when the stomach is aspirated.

[It is highly desirable that the empiric value of the various "waters" should be investigated scientifically and accurately. At present they are often used blindly, and sometimes to the detriment of the patient. Such observations as are above reported are to be welcomed as giving some certainty to our methods of treatment. The discrepancies in the results of the different observers can only be explained by dissimilarity in the conditions of the various experiments.—R. M.]

2. Dilatation of the stomach.

Dr. Clifford Allbutt (*Lancet*, 1887, ii. p. 905), after discussing the pathology and clinical features of this affection, refers to three special indications for treatment, namely :—(1) To cleanse the stomach ; (2) to prevent its distension by physical or chemical means ; and (3) to combat the constipation which is usually present. He speaks most highly of washing out the stomach for the fulfilment of the first indication. He has never seen any ill results from the practice of the method, and often great relief. On the first occasion the stomach-pump may be used, but afterwards a syphon arrangement may be employed by the patient himself. Faradisation and massage may be of use, but Dr. Allbutt has so far been disappointed with them. A cushion pad, supported by a bandage, should always be worn. Meals must be small and frequent, and must consist of flesh, fish, or fowl ; the finely-divided fats, and even cod-liver oil may be given. Farinaceous

foods must be restricted in amount, if not wholly forbidden. In opposition to Dr. Fenwick, Dr. Clifford Allbutt thinks that liquid food should be restricted, and tea, beer, and aerated waters forbidden, while small quantities of pure diluted spirit are useful. Artificial digestion should not be forgotten, but it is suggested that milk is often used too freely in these cases. The constipation is best combated by portal purgatives, preferably the laxative salines.

[In the treatment of dilatation of stomach, in addition to the therapeutic means mentioned above, the use of antiseptics is most important. Hydrochloric acid alone has great power of hindering the fermentation which goes on in the "foul puddle" (as Dr. Clifford Allbutt calls it) stagnant in a dilated stomach. Creasote, or better still, carbolic acid—two minims in pill form—is even more efficacious.—R.M.]

Françon (*Lyon Méd. and Pract.*, Nov., 1887, p. 374) shows that in cases of dilatation of the stomach from pyloric obstruction the wave of contraction of the muscular fibres can be distinctly observed through the wall of the abdomen. In primary dilatation, however, from muscular atony or atrophy, such peristalsis cannot be seen. This test may be useful in determining the cause of dilatation, and may help in its rational treatment.

3. Hysterical neurosis of the stomach.

Schlesinger (*Wiener med. Blatt.*, 1888, No. 3; and *Centralb. f. med. Wissensch.*, 1888, p. 671) reports a case which illustrates well the features of this disorder, and the necessity of a correct diagnosis before a cure can be obtained. A young girl suffered from pains in the stomach without hæmatemesis; yet ulcer of the stomach was diagnosed. A complete recovery ensued upon the prescription of a strict milk diet. One year later the patient suffered again from severe pains in the stomach, loss of appetite, nausea, vomiting, and sleeplessness. No food could be taken, and large subcutaneous injections of morphia had no effect. A history was obtained, which showed that in the boarding-school where the patient lived there was a girl who suffered from hysterical affection of the larynx, and that in a short time two other girls, and the patient also, suffered from a similar affection. Consequently the stomach disorder was diagnosed to be a hysterical neurosis, and one gramme of bromide of sodium ordered three times a day. In twenty-four hours improvement was observed, and afterwards complete cure resulted.

4. Constipation.

G. E. J. Greene (*Practitioner*, June, 1888, p. 435) recommends the use of a tasteless liquid extract of cascara, prepared by a firm

of American chemists. The ordinary preparations of cascara have an extremely bitter taste, due to the action of a ferment upon a glucoside contained in the bark, which is split up into glucose and a vegetable acid, these again undergoing further decomposition. The new preparation avoids this fermentation without interfering with the therapeutic efficacy of the drug.

Anacker (*Deutsch. med. Woch.*, No. 37, 1887) analysed the so-called Oidtmann's purgative, and found that it had as its basis glycerin, which was mixed with a little of some conium preparation and a sodium salt. The glycerin, however, seemed to be the active agent, and produced an easy action of the bowels when 2 cubic centimetres were injected into the rectum. He thinks that the purgative action is due to a withdrawal of water from the blood-vessels of the bowels.

Since the above, numerous communications have appeared, recommending the use of glycerin in the manner indicated.

Boas (*Deutsch. med. Woch.*, 1888, No. 23) has employed, as a more convenient form, suppositories containing 1 cubic centimetre of glycerin.

[The injection of about one or two drachms of glycerin into the rectum is certainly a very good aperient. Oidtmann's fluid is sometimes irritating, and induces smart action.—D.D.]

5. Diarrhœa.

Sézary and Aune (*Lyon Méd.*, 1888, No. 35) have found that lactic acid acts almost as a specific for the diarrhœa of tuberculous subjects. Often the stools become normal after only a few days of the treatment. Scarcely any ill results were noted. Occasionally there was a little gastric uneasiness, and after large doses patients complained of their teeth being "set on edge." The diarrhœa did not return after the lactic acid was stopped.

Debove (*Progrès Méd.*, No. 24, 1888) has treated chronic diarrhœa, especially that of consumptives, with finely-powdered talc (silicate of magnesia), and has obtained good results. He has given doses of ʒss. to ʒjss. without any ill effects, and has found that many patients could, with the help of this indifferent powder, take milk and oil which formerly had been refused or had caused diarrhœa. The talc was administered in milk.

O. T. Osborne (*New York Med. Journ.*, April 7, 1888) recommends salol in the treatment of diarrhœa. The symptoms indicating its use are purging and vomiting, with cramps; but it was also found beneficial in dysentery.

6. Dysentery.

Surgeon-Major Dobie (*Lancet*, 1888, ii. p. 207), while reviewing the treatment of dysentery now used in India, recommends small

doses of ipecacuanha repeated often enough to produce a feeling of nausea without actual vomiting. The addition of cannabis indica and opium is an advantage. He especially advocates the use of enemata of nitrate of silver, but not in the method formerly employed. It is better, he thinks, to inject only six ounces of a solution containing 10 grains of nitrate of silver, and this may be done twice or thrice a day, although once is often sufficient. It is not necessary to inject any neutralising solution afterwards, even though the enema be retained, which is not usually the case.

[Ipecacuanha in small doses has long been known to act beneficially on the large bowel in chronic dysentery. Injections of silver-nitrate solution should be preceded by a simple enema of warm water to wash out the bowel. I have never seen any harm result from retained enemata of silver-nitrate. An injection of six fluid ounces is not likely to reach higher than the sigmoid flexure of the colon.—D.D.]

G. S. Hull (*Pract.*, Jan., 1888, p. 59) recommends calomel in cases of epidemic dysentery. It causes prompt cessation of tormina, a free flow of bile, relieves the congestion of the liver and intestinal vessels, and acts as an antiseptic. It gives the best results when the tongue is most coated.

[Whether is the calomel or the bile the antiseptic?—D.D.]

7. Physical treatment of digestive disorders.

Von Ziemssen (*Klinische Vorträge*, xii.) gives directions for the employment of electricity, massage, and the water-cure in affections of the stomach and intestines. Electricity is most useful, he maintains, in nervous dyspepsia, in hysteria and neurasthenia, digestive hyperæsthesia, such as results from cicatrization of a gastric ulcer, and in general weakness of digestion. He applies two electrodes to the abdominal wall over the region of the stomach. The distance between the electrodes should not exceed one to two centimetres, and a current is to be used which causes strong contraction of the abdominal muscles. The first and most important effect of this application is a great increase in the appetite, with improvement of the digestive power of the stomach. This effect is due, in the first place, to a direct influence upon the stomach wall, especially upon the nerve and gland apparatus; and in the second place to a reflex action through the sensory nerves of the skin.

Electrisation of the intestines may similarly be practised. Here there is produced an irritation of the motor nerves, an increase of the intestinal secretion and of the pancreatic juice and bile. The method is of most use in atony of the bowel and in neurasthenics and hypochondriacs. Chronic constipation, and

the other hand, is better treated by massage, applied so as to press upon each part of the intestine. Massage is also of great value in chronic peritonitis with matting together of the intestines. Douches and other forms of the water-cure are recommended in chronic catarrh and atony of the stomach and bowels.

Bueler (*Thér. Monatsheft.*, 1888, p. 389) also strongly recommends massage in chronic constipation, but it is to be used with discretion. If the constipation is due to weakness of the abdominal muscles, while the intestinal muscles are relatively healthy, deep and powerful massage is required in order to promote reflex contraction of the recti abdominis. If there is atony of the intestines, on the other hand, such as occurs especially in those who lead sedentary lives, soft strokes with the palm should be used so as to avoid irritating the muscles of the abdominal wall. If there is dyspepsia, the stomach region should specially be manipulated. In the constipation of neurasthenics, it is desirable to use irritation of the skin and "frottement" of the abdomen. Massage is also of use in chronic peritonitis and perityphlitis. The results obtained have been very favourable. The rationale of the treatment is thought to be the following:—The massage produces—(1) mechanical irritation of the intestinal glands, and assistance to the movement of the intestinal contents; (2) reflex irritation, especially in nervous patients; (3) increase of the blood temperature in the manipulated organs; (4) probably a chemical action, by reason of the accumulation of carbonic acid in the intestinal veins; thus, it is thought, the intestinal peristalsis may be increased.

[I would venture to record a caution in respect to the employment of massage in any but the gentlest form at any time prior to the elapse of twelve months after an attack of typhlitis.—D.D.]

8. Tympanites treated by puncture.

Eyle (*Lancet*, 1888, i. p. 675) records a case of intestinal obstruction, in which enemata and O'Beirne's tube gave no relief. Colotomy was declined by the patient, and as the distension of the abdomen was great, puncture of the intestine was resorted to. Eight punctures were made, which greatly relieved the distension, but set up severe peristaltic action. Three days later the same operation was performed, but with a larger needle, and after the administration of morpho-atropine a large quantity of gas was liberated. There was no violent peristalsis, and an action of the bowels resulted in forty-eight hours. Puncture was resorted to several times before the patient died, always with relief to the symptoms. Post-mortem, a stricture of the rectum was found; but there was no sign visible of

peritonitis, or extravasation of feces at the site of the punctures. It is pointed out that the violent peristalsis is in such cases a source of danger, in that the bowel may thereby be ruptured. It is possible, also, that feces may escape, and that the puncture, by a movement of the impaled bowel, may be converted into a rent. In spite of these dangers, the procedure may be resorted to, to check respiratory and circulatory difficulties, to diminish the risks of rupture and peritonitis from distension, and to favour the re-establishment of normal intestinal action. The cases most suitable for such treatment are those where there is a healthy bowel and an absence of insuperable obstruction.

Puncture for tympanites.—Curtis (*New York Med. Journ.*, 1888, p. 628) gives a warning against the indiscriminate use of puncture of the intestine for tympanites. He shows, by a reference to cases, that even the smallest punctures may be followed by oozing of feces. There is least danger of this when there is some effusion of lymph on the surface of the bowel, from peritonitis, since this will limit the exudation, even though the peritonitis may tend to cause paralysis of the muscular coat. The operation should not be performed unless it is evident that the patient will succumb to the pressure of gas in the intestines upon the diaphragm, unless immediate relief be given.

"The Relief of Tympanites by Puncture" (London: J. and A. Churchill, 1888).—Dr. Ogle has collected a large number of opinions upon the desirability of the operation, and concludes that not only is it justifiable, but that the operation is not nearly so dangerous as has been stated, provided that a fine instrument, well disinfected, be used, and that the procedure is not unduly delayed.

9. Typhlitis.

Bouchard (*Annuaire de Thérap.*, p. 291, 1888) gives the following concise directions for the treatment of typhlitis:—

1. Ease the pain by an injection of morphine, or by the application of a thick layer of belladonna ointment covered by a large hot poultice.

2. Cleanse the large intestine, and render it aseptic by large injections twice a day of water at a temperature of 100° F., to which is added for each injection about a drachm and a half of biborate of soda, and two or three teaspoonfuls of a mixture of tincture of benzoin and camphorated alcohol in equal parts. The injections should be administered very slowly.

3. Prescribe absolute rest.

4. Purgatives should be used but little, and should always be the mildest possible, such as magnesia.

5. For diet, at first, milk and alkaline water, in small quantities at a time ; later, with the addition of yolk of egg. At the same time antiseptics may be given by the mouth.

10. Saline purgatives in typhlitis and acute peritonitis.

Suckling (*Lancet*, 1888, i. p. 926) advocates the use of saline purgatives in moderate doses, and with plenty of water, in typhlitis due to faecal retention, and in the acute peritonitis which may result from this. He relates a case of the kind, where opium and belladonna were first given, but vomiting and pain continued. Then half-drachm doses of sulphate of magnesium and sulphate of sodium with ten minims of tincture of belladonna were given every four hours, and improvement rapidly followed the treatment.

In a later contribution (*Brit. Med. Journ.*, 1888, i. p. 1112) Dr. Suckling shows from another case that sometimes the fluid poured out into the intestine under the influence of the salines, is retained on account of paralysis of the bowel. Such a condition is relieved by stimulants.

[In all cases there must be made, as far as possible, an accurate diagnosis as to involvement of the caput caecum coli alone, or of the appendix vermiformis. In the latter case I should reprobate the treatment by enemata or purgatives of any kind. The abdomen should be opened, and the caecal region explored as early as may be. Saline purgatives are likely to be dangerous in such cases, and in all forms of peritonitis due to obstruction ; *vide* paper by Mr. Fredk. Treves in *Med.-Chir. Trans.*, p. 165, 1888 ; Clin. Lect. on Typhlitis, *Lancet*, Oct. 6, 1888. Also papers relating to this subject (a) by Dr. Haddon in *Prov. Med. Journ.*, Oct., 1887, and (b) Dr. Macdougall, *Lancet*, Sep. 22 and 29, 1888. —D.D.]

11. Lead colic.

Torre (*Bull. Gen. de Thérap.*, Feb., 1888, p. 138) has found that good results ensue from treating the colic of lead-poisoning by rectal injections of ether vapour. To a small flask he attaches about twenty inches of rubber tubing, at the end of which is the nozzle of an ordinary enema syringe. Into the flask is placed a small quantity of ether, the nozzle of the apparatus inserted into the rectum, and the flask placed in warm water. The vapour of the ether then enters the rectum and calms the spasm in a few moments. Afterwards, 25 to 30 grammes of castor-oil are administered.

12. Codeine in abdominal pain.

Lauder Brunton (*Lancet*, 1888, i. p. 1213) found codeine of

great use in relieving pain affecting the intestine and lower part of the abdomen. He prescribes at first half a grain in the form of pill, increasing the dose if required. As a rule, it does not produce drowsiness, nor does it interfere with respiration or digestion. Consequently it is of special use when the heart or lungs are affected by disease, and also when it is desired to relieve pain without affecting the action of the bowels. Where there is diarrhoea with pain, as in malignant disease of the bowels, morphia or opium is to be preferred. In his hands it has succeeded in relieving the pain of cancer of the liver and pancreas.

13. Conium in rectal pain.

Whitla (*Pract.*, April, 1888, p. 250) comments upon the uselessness of many of the ordinary drugs in the pain which accompanies fissure and hæmorrhoids, some of them ultimately increasing rather than relieving the discomfort. Dr. Whitla found from former experiments that an ointment of the extract of conium was without any effect upon the sensory nerve endings. He recommends, however, that an ointment be made in the following way :

Two ounces of succus conii are to be placed in a small evaporating dish and permitted to evaporate slowly at a heat under 150° F. until the bulk is reduced to about one and a half or two drachms. This can be done by placing the dish on the top of an ordinary domestic hot-water cistern for twenty-four to forty-eight hours. The syrupy liquid is then to be carefully triturated with as much lanolin as will make the weight up to one ounce ; the result is a perfectly smooth adhesive ointment of a light brown or dark fawn colour, and is stable.

With this preparation Whitla has obtained highly gratifying results, by smearing the mucous membrane freely inside the sphincter. The ointment appeared to paralyse the sensory nerve endings, and also to relieve the painful twitchings by its effect on the motor nerves. To the ointment may be added 10 or 12 grains of the persulphate of iron, as recommended by Cripps in fissure. This combination has healed a fissure without resort to the knife.

14. Hepatic colic and gall stones.

Just Touatre (*Arch. Rouman. de Méd.*; see *Lancet*, ii. 1887, p. 1181) revives an old treatment of hepatic colic and gall stones by large quantities of olive oil. He himself was the patient. At seven in the evening a dose of blue pill was taken, and was followed, twelve hours later, by a draught of six ounces of olive oil ; a quarter of an hour later a similar dose was taken, and the patient addressed himself to sleep on his right side. At nine

o'clock the blue pill acted, but no gall stones were seen. After seven in the evening, however, large numbers of motions were passed, containing in all sixty calculi of various sizes. The passage of the calculi was attended by no pain, but gave relief to the pains over the liver and shoulder, and the liver soon diminished in size. The trouble recommenced in three months, but was again relieved by similar treatment.

Rosenberg (*Brit. Med. Journ.*, 1888, i. p. 933) also records a case in which no treatment—not even the Carlsbad waters—had done any good, and where the general health had suffered to an unusual degree from the loss of appetite and almost continual sleeplessness. 820 grammes of the oil were given in five doses, and in the stools were found 629 stones, varying in size from that of a hazel nut to that of a pin's head. It was thought probable that at least 200 more stones were passed but not found. The liver, which was much enlarged, became greatly reduced in size; the general health improved; but a little pain, probably caused by remaining gall stones, continued.

15. Ascites.

Permanent drainage.—**D'Urso** (*Giorn. Intern. dell. Scienze Med.*, 1887, p. 631; and *Centralbl. f. klin. Med.*, 1888, p. 425) has pursued the treatment recommended by **Caillé**, of New York (see "Year-Book" for 1886, p. 57), of permanent drainage in the ascites of hepatic cirrhosis, and recommends it on the following grounds:—(1) The removal of the intra-abdominal pressure allows of the relief of the liver circulation by the establishment of collateral outflows. (2) The removal of the direct hindrance to the flow of blood in the portal twigs. (3) The possibility of increasing the absorption power of the peritoneum; and (4) the diminution of the dropsical condition of the peritoneum by the establishment of collateral circulation. **D'Urso** finds that the favourable results of the treatment show themselves not only in the state of the liver and the other abdominal organs, but also in an improvement of the general condition. He considers that there is but little danger, as generally believed, of peritonitis, eczema of the skin, or septicæmia.

Sticker comments on the above paper, that of nine cases four died directly from the operation, and the most favourable result was nine months' duration of life after drainage had been established.

[In the practice of St. Bartholomew's Hospital I have not witnessed, or heard of, any unfavourable results for twenty years past after the operation of paracentesis abdominis. This has been carried out with what are usual, or ordinary, precautions; sometimes, and quite favourably, by means of Southey's trocars, six to

twelve or twenty-four hours being required to complete the evacuation so far as thought desirable.

In one instance an elderly woman was tapped over seventy times with manifest advantage.

When difficulty occurs in securing closure of the puncture, which sometimes, but rarely, happens, and fluid oozes for some days subsequently, I have seldom known any harm to follow, if proper cleanliness be observed.—D.D.]

Early paracentesis.—Bettelheim (*Wiener Med. Blätter*, 1887, pp. 1417–1449; and *Centrbl. f. klin. Medicin*, 1888, p. 563) reviews the evidence for and against the early employment of paracentesis in the ascites of hepatic cirrhosis. He considers that the disadvantages of such a proceeding, such as the loss of albumen, the necessity of soon repeating the tapping, and the possibility of collapse and peritonitis, to be more imaginary than real. He reports a case of cirrhosis in which he practised paracentesis for the first time only when the respiration was interfered with by the ascites and meteorismus. The tapping was performed fifteen times, and 124 litres of serous or blood-stained fluid drawn off, the intervals between the individual operations not becoming shorter. Bettelheim is of opinion that early tapping is desirable, in order to assist the chest and abdominal organs to perform their functions.

[I agree with the writer. It seems highly unscientific to attempt to remove large quantities of ascitic fluid by purgatives and diuretics, when so ready and rapid means of evacuation are at hand in the form of paracentesis. It is to be remembered that the circulation in the intestines and kidneys is already much interfered with by the pressure of the fluid, and yet these organs are often called upon by the physician to do extra work in their disabled state. Further, long-continued pressure of ascitic fluid causes non-elimination of excrementitious matters by the kidneys at a time when the liver, which might otherwise help to destroy such substances, is diseased.

The extreme measures of Ewald, who would tap as soon as fluid is detected, and of Caillé, who recommended permanent drainage, are not to be approved.

The dangers and ill effects of paracentesis are certainly exaggerated. In former days probably septic trocars played a great part in causing peritonitis, etc. I have known a case where paracentesis was performed more than 140 times in a case of ascites, the result of chronic peritonitis. Large quantities of albuminous fluid were each time drawn off, and no ill effects followed the operations.—R.M.]

Operation of paracentesis abdominis.—Richardson (*Asclepiad*, 1888, p. 236) gives some useful hints for the use of the trocar. He recommends a fine instrument, to prevent the syncope which the rapid withdrawal of fluid might cause. He covers the cannula from the first with indiarubber, through which he pushes and withdraws the trocar. The hole in the indiarubber thus made closes instantly, and so prevents air reaching the peritoneal cavity. The ether spray may be used for benumbing the skin at the region of puncture; but the centre of the frozen part should be softened by the finger-tip before plunging in the trocar.

[I would add a caution as to freezing the integuments before even minor operations in aged persons, or in cachectic conditions. I have witnessed serious sloughing as a consequence.—D.D.]

16. Milk jelly.

As an item in a purely milk diet, the following recipe is recommended (*Théráp. Monatsch.*, 1888, p. 48):—

To 1 litre (= about $1\frac{1}{2}$ pint) of milk is to be added 1 lb. of sugar, and the mixture boiled for five to ten minutes. The fluid is to be rapidly cooled, and to it added gradually and with constant stirring 30 grammes (= about 1 ounce) of gelatine dissolved in a cupful of water. Add further the juice of four lemons and three wine-glassfuls of hock. The mixture is now to be poured into small jelly-glasses and allowed to set. Brandy or any other variety of wine may be substituted for the hock. Care must be taken to cool the milk thoroughly, otherwise it will curdle.

17. A substitute for cod-liver oil.

It is undoubted that cod-liver oil has a much greater therapeutic value than any other fat which has hitherto been tried as a medicinal agent. In what this advantage consists has been thought uncertain. It has been considered that the oil contained iodine, trimethylamin, and bile constituents, which might be the cause of its superior digestibility. The quantity of iodine and trimethylamin contained in cod-liver oil is very small indeed, and can hardly have much influence upon the digestive tract. Lindenmeyer has shown that the only bile constituent present in cod-liver oil is cholesterin, which was found by Hoppe-Seyler in olive and almond oils also, so that this again cannot be the adjuvant which increases the value of the liver oil. It was suggested further that the cod-liver oil acted simply as a fat. This was to a certain extent confirmed by Berthé in 1856, but he found by comparative experiments that the liver oil was certainly more easily assimilated than were other fats, and that the dark-brown oil possessed this property in a greater degree than the light-coloured oil. Ten years later Naumann showed that this property

was due to the greater diffusibility of the oil, this, in his opinion, being caused by the presence of bile constituents. As shown above, he was wrong in his explanation, but later Buchheim proved that the constituent which caused the greater power of diffusion and emulsification was a quantity of free fatty acid. This is the view now generally held by pharmacologists, and it is supported by the experiments of Brücke and of Hofmann, who found that the presence of fatty acids facilitated the emulsification of a fat and its absorption from the alimentary canal.

The undoubted power of cod-liver oil is in many cases more than counteracted by its disagreeable taste, and by the unpleasant symptoms, vomiting, "risings," gastric catarrh, and sometimes diarrhoea, which follow its use. Moreover, the light-coloured and bitter-tasting oil contains but little free fatty acid, is not so easily emulsified or absorbed, and, in the opinion of many practitioners, is not so valuable a remedy as the dark-coloured oil. Now, this latter is prepared by allowing the livers to putrefy, and, apart from the disgusting mode of manufacture, has a foul smell, a fishy taste, and is more prone to cause vomiting, etc., than is the light-coloured oil. Consequently many attempts have been made to hide the taste of the oil or to provide a substitute for it of equal power. In last year's "Year-Book" an account was given of Senator's observations upon the use of spermaceti, fatty acids, and soaps, which he recommends in various wasting diseases. Professor von Mering, of Strassburg (*Thérap. Monatsh.*, 1888, p. 49), has further suggested another substitute for cod-liver oil, which he has found of great value. In place of the ill-tasting liver oil he has used olive oil, to which 5 to 6 per cent. of oleic acid has been added, and the fat partially saponified. This is found to have a pleasant taste, and to be easily emulsified and absorbed. The preparation is issued by Kahlbaum, of Berlin, under the name of *lipanin* (from *λιπαίνω* = to fatten). Large quantities may be given without deranging the digestive powers, and without the fat passing into the stools. Children take it willingly in doses of 1 to 4 teaspoonfuls, while to adults may be given 2 to 4 tablespoonfuls daily. It was found to increase the deposit of fat and to improve the general health. In diabetics no increase in the excretion of sugar followed the use of 6 tablespoonfuls daily for weeks. Finally, it was well borne in hot weather.

Salkowski (*Thérap. Monatsh.*, 1888, p. 230) objects that a specimen of lipanin examined by him had a slight smell and a not agreeable taste. He believes, too, that cod-liver oil contains other constituents than fatty acids, which increase its therapeutic power. One of these, he believes, is cholesterin, and he asserts that the

substance found by Hoppe-Seyler in almond and rape oils, and thought by him to be cholesterin, was really another body, phytosterin. Salkowski is of opinion that the reason why clear cod-liver oil contains no fatty acids is that these separate out during the great cooling to which oil is subjected before coming into the market, and suggests that the oil would act better if this process were not resorted to.

Von Mering (*ibid.*, p. 233) retorts that it is a question to be decided by practitioners, and not by chemists, which of the preparations is of the most value in medicine. He shows that yolk of egg contains far more cholesterin than cod-liver oil, but yet has not its remedial power. Moreover, he has tested on several persons the power of discriminating by taste between olive oil and lipanin and found that no difference could be perceived.

[I have long been of the opinion that over-refinement of cod-liver oil impairs its efficacy as a therapeutic agent. In course of time, patients often come to prefer the "strong" oils, and smaller doses of these are better worth employment than larger ones of so-called "tasteless" kinds.—D.D.]

18. Ewald on diseases of the stomach.

During the year there has appeared the second volume of Ewald's work on diseases of the digestive organs, comprising the sections on diseases of the stomach. It will be convenient to notice here the principal views he expresses on the treatment of various stomach conditions, without referring them to their several headings in other parts of this article.

Stenosis of the cardia.—The only treatment is dilatation of the stricture by sounds with or without previous gastrostomy. It must not be forgotten that the dilatation of the œsophagus above the stricture requires treatment. Putrefaction goes on here most rapidly even though no food be taken by the mouth; and consequent serious symptoms may be observed. The sac should therefore be washed out with a disinfecting fluid, and salicylic or boric acid may be used in the solid form.

As food, tapioca, arrowroot, and sago are not to be employed, because of the comparative lack of saliva, since but little mastication goes on. Food should soon be given by the rectum, in addition to that administered by the mouth. Ewald's views on rectal feeding were given in the last issue of the "Year-Book." He suggests the following as a nutrient enema: Two or three eggs are to be beaten up with a tablespoonful of cold water. To this are added a little starch, boiled in half a cupful of a twenty per cent. solution of grape-sugar, and a wine-glassful of red wine. The solution is to be well mixed, at a temperature not sufficient to

coagulate the albumen. The whole ought not to exceed $\frac{1}{4}$ litre in volume. The enema should be injected as high into the bowel as possible. After gastrostomy, grape-sugar should be added to the food placed in the stomach.

Dilatation of stomach.—Under this head Ewald includes only those cases of dilatation which are due to stricture of the pylorus. The diet in such cases should occupy as small a compass as possible, and, therefore, should comprise but little fluid. Peptonised foods are here indicated, since they contain a large amount of nutriment in small volume. Meat-powder is of use, but all starch and sugar preparations are to be avoided. Fats, too, are not easily digested, and should not be given. Nutrient enemata are valuable, in that they give the stomach rest, and may contain the fluid required by the tissues. In the way of drugs, hydrochloric acid is the most valuable, while pain may be relieved by chloral in combination with cocain, the mixture being both sedative and antiseptic. Purgatives are of great use, and if they are not absorbed from the stomach, and will not pass the pylorus, aloin may be administered subcutaneously. The stomach should be washed out with antiseptic solutions, and the author speaks favourably of massage and faradisation of the stomach.

Cancer of the stomach.—Condurango-bark, in Ewald's opinion, is of use in relieving catarrh of the stomach, but there is no ground whatever for believing in its curative powers over cancer. The symptoms must be relieved by ordinary means, concerning which Ewald has nothing new to bring forward.

Ulcer of the stomach.—"I know only one treatment of ulcer of the stomach, which warrants an expectation of success." This is complete rest of the organ, and may be obtained by rest in bed, rectal-feeding, and the administration of such nutrient materials by the mouth as will irritate the stomach as little as possible. Ewald finds saline purgatives, and especially the Carlsbad salts, of use, but iron should also be given.

Chronic glandular gastritis.—Of the agents used in the treatment of this affection Ewald arranges three groups:—(1) Those which compensate for the lacking digestive powers of the stomach. (2) Those which stimulate the flagging functions; and (3) those which aim at removing all external sources of irritation. In the first group are included hydrochloric acid and pepsin. The acid is of great value in all cases of chronic gastritis, but should be given in large quantities, in concentrated form, and after meals. It should be sucked through a glass tube, so as to avoid setting the teeth on edge. It not only helps to produce albuminates, but also prevents organic fermentation. Pepsin is

of value in mucous catarrh, and in atrophy of the stomach. It should be given in doses of 8 to 15 grains, best dissolved in water containing hydrochloric acid, and taken 15 to 20 minutes after a meal. Amongst the second group are arranged washing out the stomach, and the administration of bitters, strychnine, ipecacuanha, and belladonna. The third indication is fulfilled by attention to diet. The bowels should be kept open by aperients, and various mineral waters are of great value, particularly those of Carlsbad and Ems. For the prevention of putrefactive processes, creasote and thymol may be necessary; or as alternatives, carbolic, salicylic, or benzoic acids.

Neuroses of the stomach.—In these disorders Ewald distinguishes between the irritative and depressive forms. In the irritative variety, local sedatives must be used to allay the hyperæsthesia of the stomach, and among these Ewald specially commends the combination of morphia, cocain, and belladonna. The bromides may be given as general sedatives, but the general health should be improved by the administration of arsenic and iron. In the depressive variety the Weir-Mitchell treatment is most beneficial.

DISEASES OF THE KIDNEY, DIABETES, ETC.

BY CHARLES H. RALFE, M.A., M.D. CANTAB., F.R.C.P. LONDON,
Physician to the London Hospital.

I. Albuminuria.

(a) Dr. V. Merley (*De l'Albuminurie Intermittente et Cyclique*, pg. 113, Ballière, Paris, 1887). The author, after fully reviewing the history of that form of albuminuria which is not dependent on organic disease of the kidneys, with full regard to the observations of such English authorities as have laboured in this direction, as Pavy, Grainger, Stewart, Dukes, Dickinson, and Ralfe, and having fully discussed the etiology, pathology, and diagnosis, sums up the various suggestions that have been made with respect to the treatment of this condition as follows:—(a) *Hygienic treatment.* Dry and stimulating frictions, sometimes with cold lotions, to excite the functions of the skin. The use of flannel, round the abdomen particularly, is advised. Residence in a pure country air—when possible, on the shores of the Mediterranean—is necessary, to promote the proper metabolism of the food. Exercise, as it has an influence in causing the appearance of such albuminuria, must be forbidden, except in a very limited degree. Alcohol, which retards tissue changes, must be proscribed, especially white wines, spirituous liquors, also tobacco. (b) *Constitutional treatment* must depend on the nature of the individual case. For anæmic cases a nutritive and tonic dietary must be ordered, and preparations of iron in all their pharmaceutical forms, or as chalybeate waters. The use of arsenic requires especial mention, since the results obtained by its use have been very favourable. Dr. Merley records a case in which an apparently permanent albuminuria was changed into the cyclical form by the use of the arsenical water of Bourboule; of all arsenical preparations he prefers arseniate of iron. Inhalations of oxygen and the administration of hæmoglobin were found also

to be very efficacious. In neurotic cases, sedatives and antispasmodics are necessary; potassium and sodium bromide, capsules of ether given after food, valerianate of ammonia, are all useful in these cases. The greatest prudence must be exercised if douches are employed, since several physicians have observed an increase of the albuminuria after each application of the douche (N.B.—I have obtained all the quieting effects of the douche without exciting albuminuria in these cases, by ordering the body to be sponged with hot sea-, or sea-salt, water, 96° F.; the steady sponging relieves the nervous irritability, whilst there is no shock as with the douche). (c) *For the treatment of the albuminuria* many suggestions have been made, which have been attended with good results. If the albuminuria is decidedly intermittent, then quinine is naturally indicated. In the paroxysmal form described by Ralfe and Noorden, the treatment should be by iron combined with arsenic and quinine. Klemperer has employed diuretics, with a view of diminishing the specific gravity of the urine, and he asserts that these check the tendency to intermittent albuminuria. Tessier has made use of tannin, the syrup of tanno-iodine, benzoate of soda, phosphate of potash, and potassio-ferric tartrate, also inhalations of oxygen. The dietetic treatment must also be particularly cared for. The English authorities insist on white meats in preference to red. A milk diet is approved of, if it does not weaken the patient or cause disgust. The use of eggs is not forbidden. Dyspeptic cases require special treatment, with digestive powders (bismuth?), papain, and pepsin. The mineral waters indicated are Plombières, Néris, or Bagnols, in subjects with a taint of rheumatism; Ragatz or Baden, in neurotic patients; Royat or Bourboule, when arsenical treatment is specially indicated.

(b) Dr. Grainger Stewart (*Clinical Lectures*, vol. ii., *Albuminuria*; Bell, Edinburgh, 1888, p. 224) has written the most important work that has appeared for some time on albuminuria, organic and non-organic. Neither the scope of our work nor the space at our disposal allow us to do more than draw attention to this volume, which is the most excellent epitome of the subject at present before the profession, giving not only Dr. Grainger Stewart's own observations and conclusions, but a full and generous review of the investigations and opinions of other workers in the same field. With regard to Dr. Grainger Stewart's observations on diet and treatment, they will be found to correspond with the summary we gave in the "Year-Book" for 1888, and which will be found in pp. 78—82 of that volume.

(c) Dr. L. Riess (*Berl klin. Wochens.*, No. 22, 1888) has treated

twenty cases of nephritis with *fuschine*, and observes that this mode of treatment exercises no appreciable influence on the character of the albumen filtrated, nor on the progress of the disease. The doses given were from 50 centigrammes daily to, in most cases, 1 gramme. The analysis of the albumen was made daily in twelve cases of various forms. Of these twelve cases only two presented a marked diminution in the quantity of albumen. In the first of these two cases the urine did not contain more than a trace of albumen after five days of treatment. In the second, the albumen, which before treatment was about 6·84 per cent. in the twenty-four hours, fell to 2·98, and disappeared completely at the end of three weeks of treatment. But it is necessary to remark that one of these cases was in a child of four years, following on scarlet fever, and the other in an adult, following on an attack of acute rheumatism, and it is probable that the albuminuria may have ceased when the specific causes were withdrawn. The other ten cases were those of chronic nephritis in different states of the malady. In all these cases the fuschine had no effect in the transudation of the albumen. During the whole of the treatment, which ranged from ten days to three weeks, the patient bore the drug with perfect tolerance; there were neither digestive troubles or any nervous symptom, whilst the urine presented a red colour. Dr. Riess's experience accords with that of other observers, and though *fuschine* is from time to time recommended for the treatment of albuminuria arising from nephritis, it has not found general favour. In cases, however, of extra-renal albuminuria, success is more likely to be obtained, especially in chronic pyelitis and cystitis.

2. Uræmia.

(a) Dr. W. Carter (*Lancet*, 25th Aug., 1888), taking the subject of uræmia for the Bradshawe lecture of the current year, thus summarises the principles upon which the treatment of the condition must be based: 1. *In cutting off one or other of the urinary poisons at their source.* Under this head he recognises the great importance (a) of limiting potassium salts both in food and medicine; (b) of employing the simplest and most easily assimilated diet, such as milk; (c) bowel disinfection; (d) maintaining at its best the functional activity of the liver; (e) of care in the nature of nutrient enemata. 2. *In directly or indirectly withdrawing or diluting the poison* by (a) venesection; (b) by purging; (c) sweating; and (d) transfusion. 3. *In burning up the poison* by (a) active exercise; and (b) administration of oxygen or oxydisers. 4. *In antagonising the poison*, or at least overcoming special symptoms. Reducing the above principles to practice, the first

caution inculcated as to potassium salts would lead to the substitution of sodium salts when the iodides and bromides of the alkaline oxides are required. The diminishing of the poisonous products reabsorbed from the intestines can be effected indirectly by diet; for if a healthy man be fed for a given length of time on an ordinary mixed diet, and then for an equal length on milk alone, the urine of the second period is much less poisonous to animals when injected into their veins than the first. But when milk cannot be taken in large quantities recourse must be had to direct disinfection; and of these naphthalin, iodoform, and animal charcoal are the best. Venesection should be resorted to if the pulse be hard and quick. Moderate bleeding will do no harm even if the patient be anæmic, whilst if he is not it will do much good. Adding to the blood equally dilutes the poison as bleeding, whilst if the patient be very anæmic, or unconscious, it may be the only way of doing so. Dr. Carter quotes a case of uræmic convulsions followed by coma, in whom 120 grammes of blood were introduced by means of Dieulafoy's transfuser, with the effect of a complete clearing away of the uræmic symptoms, and subsequent great improvement, as shown by diminished excretion of albumen, improved nutrition, and increased body weight. Dr. Carter dwells on the practical value of purgation and diaphoresis, and notes Bouchard's criticism with regard to their prolonged employment. [With regard to this question, it appears to me that safety lies in the mean. Undoubtedly anything like severe purgation or violent sweating not only tells heavily against the patient in the long run, but may also induce uræmia by draining off the water of the body and thus concentrating the poison in the blood; but a gentle and regularly continued action of the bowels, and employment of the vapour bath for short periods daily, give great relief and aid most effectually in the elimination of the poison.] Next to the elimination of the poison, its oxydation is the best preventive method, and for this Dr. Carter advocates Jaccoud's treatment of inhalation of oxygen. As much as ten litres may be inhaled daily, and can be effectually administered by means of an ordinary ether inhaler fitted with a bag for the supply of the oxygen mixed with atmospheric air. For the relief of the spasms, although some writers have employed morphia without ill effects being produced, Dr. Carter evidently does not approve, unless used with the greatest care, but prefers the inhalation of ozonic ether from half to one drachm at a time. The prejudice against the use of morphia in Bright's disease is so strong in this country that there is little fear of its reckless adoption, although *the experience of some American physicians has shown that*

when judiciously employed it is capable of affording great relief. [In a patient of mine suffering from granular kidney, with dropsy and ascites, the subcutaneous injection of $\frac{1}{6}$ th grain of morphia speedily relieved a persistent and distressing attack of renal dyspnoea, which all other means had failed to control, and the relief was continued for some days following, without further recourse to the drug.]

(b) Dr. Partzevsky, Moscow (*Med. Obsv.*, No. 5, 1887), records the results of the treatment of ten cases of uræmia by means of *sodium benzoate*. Three of the cases were suffering from interstitial and seven from parenchymatous nephritis. The salt was given hourly in doses, that amounted for the whole twenty-four hours from one to two drachms. When administration by the mouth was impossible, it was given by enemata. Nine patients recovered, and one patient died. The administration of the *sodium benzoate* gradually caused the convulsive attacks to cease, and the patient fell asleep, awakening to full consciousness, and the albuminuria generally disappears. If given early, when the first symptoms make their appearance, the attack may be warded off altogether.

3. Morphine in diabetes.

Dr. Mitchell Bruce (*Practitioner*, July, 1888) continues his investigations into the comparative value of codeine and morphine in the treatment of diabetes on the same general plan of his last paper, an abstract of which appeared in the "Year-Book" for 1888, p. 86. In the two cases selected for experiment, the condition of the urine on admission was first carefully ascertained, the first step in the treatment being to put the patient on strictly anti-diabetic diet, without medicine, and to keep him on this only so long as the sugar continued to fall. The diet was meat, 6 oz. ; gluten bread, 10 to 14 oz. ; eggs ; milk, 2 to 3 pints ; tea, or Van Abbot's cocoa, 2 pints ; water and ice about 3 pints. When the amount of sugar had reached a minimum, and was found to remain constant, or nearly so, and a condition of "sugar equilibrium" was reached, the influence of drugs was then proceeded with. Codeine in the form of the phosphate was first given, beginning with small doses, and gradually increasing the amount until its effects appeared to have been fully ascertained. The drug was then slowly reduced in dose, and finally removed. After an interval of about a week on strict diet, which was sufficient to restore the patient to a condition of "sugar equilibrium," morphine acetate was commenced ; the dose, small at first, as with the codeine, was pushed as long as obvious effects continued to be produced on the excretion of sugar. In both cases pyrogallie acid was given

for a short time before the codeine, for the purpose of trying whether any result could be obtained from the use of safe doses of a substance that has been proved by Dr. Noel Paton to have a powerful influence on the excretion of urea. No definite effect of pyrogallie acid on the glycosuria was discoverable in the two cases, and it was not further proceeded with. The results may be thus briefly stated:—(1) The phosphate of codeine made an impression on the urine, diminishing the volume, lowering the specific gravity, and reducing the amount of sugar. The maximum result was obtained on the fiftieth day, when about 22 to 27 grains a day were taken by the two cases respectively. The sugar, however, was never completely removed from the urine. Dr. Bruce, however, thinks that if larger doses had been given the sugar excretion might have been arrested, as it was with 28 grains of codeine 930 grains of sugar were still passed. When the codeine was withdrawn, the sugar rose steadily in amount. (2) The effect of the acetate of morphine was more rapid and powerful than the codeine. The sugar fell till the morphia administered reached 5·8 and 6·3 grains respectively, when it disappeared; the volume of urine and the specific gravity in both cases being also remarkably lowered. One case gained $4\frac{1}{2}$ lbs. and the other 7 lbs. The patients never felt sleepy or dull during the day, but were bright, cheerful, and vigorous. (3) The comparative value of the two drugs could now be estimated (*a*) by their power; (*b*) their cost; (*c*) their safety. Of the two the morphine proved unquestionably the more powerful; it completely removed the sugar, the codeine did not. Again, the amount of morphine required to produce this effect was but one-fourth of the codeine; whilst morphine costs only 5s. 9d. an ounce, codeine is 18s. With regard to their respective safety, Dr. Bruce, in spite of Dr. Pavy's assertion that "the advantage of codeine over opium and morphia is that it is equally efficacious in controlling the disease, and does not exercise the same narcotic effect," has rarely found that cases treated with opium or morphine suffer from the narcotic effects of the drugs, so long as the sugar continues to fall. In the two cases recorded, the patients were never sleepy or dull during the day-time, but on the contrary bright and cheerful. A confirmation of Dr. Bruce's observations was made by Professor Thomas Fraser, of Edinburgh, in the section of Pharmacology and Therapeutics at the Association meeting at Glasgow, in a paper on the "Action of Morphine, Codeine, and Atropine in Diabetes Mellitus," who, quite independently, arrived at the same conclusion as Dr. Bruce, that codeine only acts as a "weak" morphine, the latter drug being greatly the superior. As this paper is not

yet published *in extenso*, its contents must stand over for the next "Year-Book." But in considering the question of the various preparations of opium and its alkaloids in the treatment of diabetes, it is important to bear in mind the peculiarities of the patient in respect to their tolerance for the drug. [As I observed last year, not only has each patient a certain minimum and maximum range, within which the drug exerts its greatest sugar restraining influence, but that some patients tolerate one preparation better than another. In one case recently under my care, the patient was unable to take any narcotic prepared from opium, though numerous preparations were tried. In other cases, where the intolerance is not so strongly marked, it may be as well to try the "weak" forms of morphine before advancing to the stronger and more active preparation.]

4. Opium and belladonna in diabetes.

Dr. Villemin (*Bull. Gén. de Thérap.*, Feb. 23rd, 1888) relates a case of diabetes in which opium and belladonna, associated, successfully relieved the glycosuria. The patient for two months had passed daily 12 to 14 litres of urine with 50 grammes of sugar. Ordinary treatment having failed, Dr. Villemin, having previously obtained good results from the administration of opium and belladonna in a case of diabetes (*vide* "Year-Book," 1888, p. 88, No. 7), instituted the same treatment, and prescribed 10 centigrammes of extract of belladonna and 5 centigrammes of opium daily. Seven days after the urine fell to 10 litres with 40 grammes of sugar. On gradually augmenting the dose of the two medicines, so that in two months the dose of each amounted to 15 centigrammes daily, the urine eliminated only averaged 3·4 litres, with 2·5 grammes of sugar daily. On again raising the dose to 20 centigrammes, in eight days the last traces of sugar disappeared. When the treatment was discontinued the diuresis and sugar returned, but again disappeared in five days when resumed.

5. Saccharin in diabetes.

(a) A. Pollatschek (*Zeit. f. Therapie*, No. 9, 1887) has found that the best solution of saccharin is 100 grammes of saccharin in 100 times its weight of water, together with 120 milligrammes of bicarbonate of soda. This solution is useful for flavouring the articles of diet and medicines for diabetic patients. As saccharin is 280 times sweeter than sugar, only small quantities must be used, 1 cc. of the solution being sufficient to disguise the taste of 1 centigramme of quinine. This solution of saccharin is probably of the same strength as the so-called elixir of saccharin sold in England, of which 10 minims is sufficient for a cup of tea or coffee.

(b) Dr. Eichhorst (*Münch. med. Wochsft.*, July, 1888, p. 478) finds saccharin of much value in diabetes, but warns against its use in large quantities, on account of the unpleasant after-taste and nausea it may provoke. Salkowski (*Virchow's Archiv*, cv. p. 46) has confirmed its innocuousness, and Stadelman has also found it harmless in nine out of eleven cases, in doses of from 50 to 75 grains (!); in two cases, however, it gave rise to gastric disturbance.

6. Jambul in diabetes.

(a) Dr. J. M. Cole (*Brit. Med. Journ.*, April 28th, 1888) reports the failure of jambul in a case of diabetes which had previously improved under restricted diet, codeine, alternated with sodium salicylate, and Bethesda water. Under less than a fortnight of jambul the urine became trebled in quantity and the sugar ran up to 40 grains per ounce. On again resuming codeine she became stronger, and in fourteen days the sugar fell to 17 grains per ounce. A friend of this patient, who had also tried jambul, was likewise disappointed; the drug was obtained from a first-rate London firm. [A year's experience has, on the whole, proved disappointing in my hands. In two cases the patients expressed themselves the better for the drug. In one (a lady) the urine diminished from about 7 pints to 5 pints, the specific gravity and the sugar proportionately 1.035 to 1.034; unfortunately, the improvement was only temporary; still, the patient says she feels better when taking the jambul. The other, a hospital case, also says the jambul does him good, though I have noticed no effect on the condition of the urine. In the other cases, whilst doing no good, it has done no harm.]

(b) Dr. Quanjer (*Weekbl. v. h. Nederl. Tydschr. Geneesk.*, i., 1888) has made use of the bark of the syzygium jambolana, instead of the seeds, in diabetes. It can be used as an infusion: 10 parts of bark to 100 of water. It is reported as having been successfully employed.

7. Diabetic pruritus.

(a) M. Verrier (*Gaz. d. Gyn.*, 1887, viii. 1) gives the following formula for the relief of severe pruritus vulvæ: R. Acidi carbolici, $7\frac{1}{2}$ grains; morphii acet., 6 grains; acidi hydrochlor. dil., 45 minims; glycerin, $2\frac{1}{2}$ drachms; aq. destil. ad 3 drachms. It will also be found useful for the relief of the intense itching of the vulvæ, that so frequently is a distressing symptom of saccharine diabetes. The patient should be directed to wash the external parts well with terebene soap and warm water, then dip a soft sponge in the lotion and apply it to the affected spot.

(b) Dr. J. Heitzmann (*Centralb. f. die Gesamte Therapie*, Dec.,

1887) distinguishes between local conditions and general disease, as causes of this troublesome affection. Diabetes mellitus is the principal, if not the only general disease which causes it. The cure of this condition will be effected by the successful treatment of the diabetes, without any local treatment, he considers, being necessary. This, however, is a statement which experience will hardly confirm, for the itching and irritation of the vulvæ will often continue, though no doubt less severely, after the amount of sugar has been considerably reduced, or has entirely disappeared under dietetic restrictions and sedative treatment. In all cases local treatment should be adopted, so that the patient may obtain relief as speedily as possible.

S. Diabetic coma.

Dr. F. W. Mott (*Practitioner*, June, 1888) reports four cures of diabetic coma. He observes that as therapeutic agencies seem powerless, no effort should be spared to avert an attack, which may be done by an acquaintance with the existing causes. In the first case recorded, the coma was attributed to the fatigue occasioned by removal to the hospital, moreover the attack may have been impending, for she complained of symptoms which could be associated with absence of knee-jerk, to which Bouchard and Guignon attribute importance as prognostic of impending coma. There was also a possibility of peripheral neuritis, as the patient had suffered from weakness and "pins and needles." In the second case, the exciting cause was not determined. In the third case, the patient had been alarmed the same day by the occurrence of a case of scarlet fever in the ward, as on a previous occasion he had contracted measles in the hospital; two days previously the morphia which he had been taking for his disease, and which had been gradually reduced, was stopped. The point of interest in this case is whether the coma was induced by the fright, or to the entire withdrawal of the morphine. The last case was remarkable for its severity and its rapidly fatal termination. On admission to the hospital the diet of the patient was changed from a diabetic to an *ordinary full diet*; this, in addition to the fatigue and excitement of being brought to the hospital, was, no doubt, a sufficient cause.

9. Diabetes insipidus (polyuria).

(a) Dr. J. N. Randall (*Medical News*, April 7, 1888) reports the case of a girl of eleven years of age, who had passed for some weeks about nine and a half pints of non-saccharine urine daily. Valerian, ergot, tannin, were given successively without effect. The patient became weaker, and the drain as great as ever. Eight grains of *sodium salicylate* in an aqueous solution were now

given after each meal. In ten days there was an amendment; from this time the treatment was continued, and the urine steadily diminished in quantity; till after five months the amount was reduced to two and a half pints, and the weight increased by eighty-seven pounds.

(b) Dr. Huchard (*Revue Gén. de Clin. et de Thérap.*, 1887) administered *antipyrin* in doses of from 1 to $1\frac{1}{2}$ drachms daily, in a case of polyuria arising from a meningo-myelitis. The urine shortly fell from a daily excretion of from 28 to 30 litres to about 4 litres. Gönner, of Zurich, has previously obtained good results from the use of this drug in cases of saccharine diabetes.

(c) Dr. Eichhorst (*Münch. med. Woch.*, July, 1888, p. 478) reports a case of diabetes insipidus in which an excretion of twenty-six pints was reduced to normal, and maintained there by seventy grains of antipyrin administered daily. He has obtained no good results with the drug in diabetes mellitus.

(d) M. Buequoy (*Bul. Gén. de Thérap.*, May 25, 1888, p. 75), in a paper read before the Société de Thérapeutique, alluded to the recent communication of M. Huchard on the efficacy of antipyrin in certain forms of polyuria, and read the notes of a case which had derived immediate benefit from the employment of ergot. The patient was sixty-nine years of age, suffering from a polyuria of nervous origin, but presenting a robust appearance. About four years ago he fell into the sea, from which accident he dates the commencement of his disease; for six weeks afterwards he noticed his urine had become more abundant. He then underwent treatment by valerian, and was relieved in about five months. For three years his health remained good, but at the commencement of the present year he lost his son and his wife went mad. The polyuria returned immediately after these events. On admission at the Hôtel Dieu the quantity of urine passed during 24 hours was found to average 13 to 14 litres; specific gravity, 1.004; colour, No. 1 Vogel; with a faintly acid reaction. The health of the patient was otherwise excellent. After four days' observation the patient was placed on large doses of ergot, being allowed at the same time to eat and drink at discretion. After the first 24 hours the amount of urine fell from 14 litres to 11, on the second day to 9, on the third day to 8.5, on the fourth to 7.5. After this the amount remained stationary at 7 litres for about four days, the quantity of the drug was reduced one-third, and at once a further diminution of urine followed, the quantity being 4 litres up to the time the medicine was suspended. Since the discontinuance of the drug this improvement has been

maintained without interruption, and the patient was discharging 2 to 3 litres when dismissed from the hospital.

10. Diuretics.

(a) Dr. Phillips London (*New York Med. Record*, Sept. 10, 1887) read a paper at the International Congress, Philadelphia, on the action of certain drugs on the circulation and secretion of the kidney, thus:—1. Drugs that first contract and afterwards dilate the kidney, as *caffeine* and *ulexine*. In the first, during contraction the flow of urine may be arrested; during dilatation, increased proportionately with the amount of dilatation. The possible arrest of secretion during the first stage is special to caffeine, and may always be obtained by large doses. With ulexine the pressure is greatly raised during the first stage; in the second, expansion is much greater in degree but shorter in duration than with caffeine, and is accompanied by a brief but decided increase of the urinary flow. 2. Substances that dilate the kidney but to a less extent than caffeine and ulexine, as *dextrose*, *urea*, *sodium chloride*, and *acetate*, and probably all urinary constituents. 3. Drugs that contract the kidney without subsequent expansion:—*Digitalin*, with increased secretion of urine; *spartein*, with diminished secretion at least in health; *strophantin* causes temporary contraction, but no marked increase of secretion; *apocynin*, temporary contraction and no definite increase of secretion; *turpentine*, *adonidin*, and *barium chloride* give similar results.

(b) Dr. Silva, Turin (*Centralblt. f. Klin. Med.*, No. 19, 1888), considers that the diuresis set up by *calomel* in cardiac disease is caused by an increased glycæmia, produced by the action of the mercury on the liver, and also by active dilatation of the renal vessels following stimulation of the convoluted tubes. After several days' administration of *calomel*, Dr. Silva noted an increased percentage in the amount of sugar in the blood; whilst the amount of urea excreted, though increased, did not rise so high as was to be expected from the considerable diuresis. In one case uræmic symptoms were aggravated instead of being relieved. Dr. Silva is therefore inclined to think that the production of urea caused by the action of mercury may be larger than its excretion by the kidneys, and this accumulation is the cause of the increased stimulation of the convoluted tubules.

(c) Professor Nothnagel (*Thérap. Monatsch.*, May, 1888) considers *calomel* is of great value in dropsy due to heart disease, but ineffectual in dropsies dependent on nephritis, hepatic cirrhosis, and cachexia. He prescribes *calomel* 3 grs. with sacch. lactic 7½ grs.; four of these powders are taken the first day. On the first and

second day the excretion is not increased, but on the third or fourth day the flow will rise from 300cc. to as much as 7000cc. The quantity falls gradually during the following eight days. An interval of from two to four weeks should be interposed, and the treatment taken up again. Should no diuresis follow after one or two attempts, eight days intervening between each attempt, the plan of treatment should be abandoned. Care must be taken to protect the mouth; for this, potassium chlorate, tincture of rhatany, or myrrh may be employed.

11. Elimination of mercury by the urine.

(a) Dr. Sonchow (*Journal de Médecine*, October, 1887) has shown experimentally that the elimination of mercury by the urine begins later, and the quantity of mercury eliminated is comparatively less, in the cases in which iodide of potassium is simultaneously taken. And that iodide of potassium administered during or after the mercurial cure lessens at once the quantity of mercury daily eliminated. And so far from contributing to the elimination of mercury, as some have thought, it rather seems to oppose it.

(b) M. F. Balzer and Mdle. Klumpe (*Revue de Méd.*, April, 1888) have shown that after a single dose the elimination is rapid and apparently at an end, taking place chiefly by the kidneys, but also by the saliva, sweat, fæces, and in suckling women by the milk. After a continuous employment of the drug, elimination is maintained for some time after the administration is stopped. The amount of mercury that can be eliminated by the kidneys when the body is thus saturated is about 0.06 grme., about half this amount by the saliva, and the remainder by the bowels; possibly exciting diarrhœa. It is suggested, therefore, that the administration of mercury should be stopped as soon as the elimination by the kidneys reaches the maximum, for beyond this no increase of polyuria seems to have effect in removing it from the body, whilst its passage by other channels is sure to prove hurtful.

12. Dysuria.

(a) Mr. H. Fenwick (*Lancet*, May 5, 1888) states that the injection of a 20 per cent. solution of cocaine in the urethra relieves ordinary neuralgic pain radiating from the renal organs in a half to three minutes' time, but pain arising from carcinoma or renal calculus is not relieved. Thus, if the pain is relieved, he is able to assign a simple and probably transient cause, otherwise he gives a more guarded prognosis, since he has frequently found that such persistent pain was due to carcinoma or renal calculus.

(b) Dr. C. Pauli (*Centralb. f. die Gesammte Thérapie*, Oct., 1887). The conditions that lead to the more frequent necessity

for micturition in old men has not hitherto received the attention it deserves. Some have explained it as caused by diminished size of the bladder in old age, others to lessened innervation, in consequence of which the detrusor muscle loses its power. The increased frequency of micturition during the night has been accounted for by the greater determination of blood to the head and the cord in consequence of the horizontal position, thus disturbing innervation. The extract of *nux vomica* has been found useful in these cases. In cases complicated with rheumatism the addition of camphor has been found useful. Frictions of liniment of camphor with tinct. opii, or with oil of turpentine, applied warm to the abdomen are very beneficial. In cases in which the energy of the detrusor muscle is so much impaired that complete paralysis of the bladder may be feared, ergot should be employed.

(c) **Dr. A. H. Smith** (*New York Med. Record*, Oct. 8, 1888) relates that in a case of stricture of the urethra, which a No. 4 English catheter would not pass, that one morning after exposure to cold and fatigue, the patient was unable to pass any urine except by drops. As the catheter was unable to pass, Dr. Smith introduced a larger one down to the seat of stricture, and injected a 4 per cent. solution of cocaine. Within a few minutes the patient passed urine freely without any assistance.

13. Enuresis.

Dr. S. J. Wright (*New York Med. Record*, July, 1887) records a case of enuresis without cystitis or calculus, or any pain, occurring in a lady aged 34, of neurotic temperament. The trouble had existed since childhood, and no relief had been obtained from local and general treatment. She was obliged to rise many times in the night, passing only small quantities of urine, the total amount for the twenty-four hours being about 3 pints. Naphthol in a capsule was administered internally, and also as a spray for the relief of a nervous cough she suffered from. The enuresis rapidly subsided, although there was no change in the appearance of the urine. A temporary cessation of the naphthol caused a return of the complaint, but it again left her on resuming it. She can now omit the drug without a return of the enuresis.

14. Endemic hæmaturia.

Dr. J. F. Allen, Pietermaritzburg (*Practitioner*, April, 1888), contributes an important article on parasitic or endemic hæmaturia. He combats the view that the parasite lives in the general vascular system, or even in the portal system, or is introduced into the stomach and bowels by drinking infected water. *See*

observes that the power of the parasite for laying eggs is so enormous, that if, instead of passing away from the urethra, these were deposited in the course of the circulation, the veins would become blocked; yet obstruction, he remarks, arising from this cause is never observed. The fact that the disease is almost exclusively confined to boys who bathe, points to some connection between that habit, and the age and the sex of the bather, as affording some explanation of the mode by which the fluke enters the urinary tract. The facility of gaining access in bathing is afforded by the sack-like receptacle formed by the prepuce in boys, from which point the parasite can easily enter the urethra. Adults not presenting the same anatomical facility for entry, bathing is not so dangerous to them as boys. The variations in the hæmaturia also throw some light on this urethral occupation. When the parasite is in the bladder, the blood and urine being mixed there, the whole discharge is sanguineous. When the occupation is in the upper part of the urethra, the blood and urine do not get so mixed; the urine therefore passes clear, the blood coming afterwards. If the occupation be low down in the urethra, the parasite being in such a position is liable to be disturbed by every movement of the body, thus leading to the discharge of blood at all times. Taking the view that the invasion of the urinary tract is always local, Dr. Allen has successfully employed suitable injections into the urethra and bladder (he does not say of what nature), and also suggests a prophylactic measure—*circumcision*. He thinks it very probable that in ancient Egypt, the presence of this little fluke in the waters of the Nile suggested the adoption of the operation originally, and the Jews, who have faithfully preserved the custom, carried it with them when they left Egypt, but advanced it from a sanitary precaution to a religious rite. In other parts of Africa where the fluke exists, circumcision is or has been practised—in the neighbourhood of Pietermaritzburg among the Basutos, and at one time almost within living memory among the Zulus. If these and other people of the Abantu race really did migrate south from the valley of the Nile, they, like the Jews, carried the custom with them. But wherever it was instituted, it was probably originated as a protection against the parasite. Although Dr. Allen does not mention the composition of the injections he has successfully employed in this communication, it is to be hoped he will do so. Cases coming from Africa home are by no means infrequent, and we are anxious for guidance on this subject. I have not found the use of injections of potassium iodide, as originally suggested by Dr. J. Harley, satisfactory; better by far

is sodium benzoate in a solution of buchu. [Turpentine I have found a valuable agent in treating this troublesome affection. In a case I observed this summer with Dr. Cripps Lawrence, the administration of turpentine capsules always brought away a considerable discharge of blood, with branch-like masses of mucus, after which the patient would feel much relieved, and the urine would become clear and bright for some time after.]

15. Lithuria.

(a) Dr. W. J. Crittenden (*Virginian Med. Monthly*, Feb., 1888). *Ammonium borate*, according to the author, possesses a lithontriptic action on uric acid calculi. Dr. Crittenden prescribes 15 grains of ammonium baborate every two hours during attacks of colic, and continues the dose till urination becomes copious. As a preventive measure, he advises its daily use for several months in doses of 5 grains three times daily, leaving it off for two days every fortnight. In obstinate cases he combines this treatment with extract of hydrangea and preparations of lithia.

(a) Dr. Pfeiffer (*Bull. Gén. de Thérap.*, 8th May, 1888), in a communication to the Société de Médecine, Berlin, has suggested a novel method of testing the solvent action of various medicines on uric acid. He places definite weighed amounts of this substance on filters, then administers the drug he wishes to test to the patient, and subsequently collects the urine, which is passed in definite amounts through the filters on which the uric acid has been placed. The solvent action of the medicated urine is thus tested. By this means he has found that the water of Vals stands in the first rank among mineral waters as an uric acid solvent. Among medicinal agents sodium bicarbonate came first, but lithia had a well-marked solvent action, though its effect was but fugitive. To strong alkaline medicaments Dr. Pfeiffer prefers weak alkaline waters, or the boro-citrate of magnesia.

(c) Dr. A. Haig (*Lancet*, 14th Jan., 1888) has shown in papers read before the Royal Medical Chirurgical Society that a certain form of headache is accompanied by an undue excretion of uric acid, and that it is possible to increase or diminish this excretion by means of acids and alkalies. Moreover, he has stated that a large dose of acid will cure the headache and stop the undue excretion. *Salicylic acid*, however, as an exception, increases urinary acidity, and does not diminish the excretion of uric acid, nor give rise to headache. He attributes the action of acids and alkalies on uric acid excretion to the fact that alkalies increase, and acids diminish, its solubility. Salicylic acid increases the solubility, like an alkali, for salicyluric acid differs from uric acid in being greatly more soluble in water than uric acid. Benzoates, however, do not

act like salicylates, because hippuric acid is less soluble than salicyluric acid. Headache is present with the rush of uric acid, with the presence of an alkali, but not with salicylates, because he thinks possibly that under salicylates uric acid is present in the blood in the form of salicyluric acid.

16. Pyuria.

Dr. Oliver (*Lancet*, May 5, 1888) relates the case of a lad twelve years of age suffering from cystitis, who was cured in three weeks by the administration of fifteen minim doses of the liquid extract of *collinsonia canadensis*. Good results have also been obtained in cases of pyelitis, but it appears to act most efficiently in cystitis.

Dr. Andeer (*União Medica*, Oct., 1888) has found resorcin, in solutions varying from 10 to 15 per cent., useful in cystitis, when the urine is either neutral or alkaline, one to three injections being sufficient to cure acute cases, and when chronic, about half a dozen are needed, at intervals of two or three days. In syphilitic, tubercular, or cancerous degeneration of the bladder, though resorcin can have no specific claim made for it, yet it proves a useful disinfectant and gives much comfort.

RHEUMATISM AND GOUT.

BY ROBERT MAGUIRE, M.D., M.R.C.P.,

Physician to Out-Patients and Joint Lecturer on Pathology, St. Mary's Hospital.

I. General treatment of acute rheumatism.

Pollock (*Lancet*, 1887, ii. p. 949) asserts his belief that the poison of acute rheumatism is manufactured *within* the body. He thinks also that one attack does not predispose to further outbreaks, but that in time the tendency to the disease wears itself out. Salicin, in Dr. Pollock's hands, has not been very successful, but he speaks highly of the salicylate of soda. Alkali may be combined with it, if there is evidence of great acidity, and it is important to keep up the action of the drug for some days after the symptoms have disappeared so as to avoid a relapse. Towards the close of the case, when the joints are left swollen and painful, iodine, internally and externally, is of use. During convalescence, tonics—especially steel and quinine—should be given, and if pain still lingers, five grains of the salicylate of quinine three times a day is of much service. If salicylates are not successful, salicine, alkalies, or Sir Alfred Garrod's alkaline quinine mixture may be prescribed. "Quinine and bicarbonate of potash are rubbed up together with a little mucilage and some aromatic tincture, in such proportions that each ounce and a half of the mixture contains five grains of quinine (in the form of carbonate) and 30 grains of potash." The dose may be given every four hours so long as may seem desirable.

The diet should be of beef-tea and milk, to which may soon be added farinaceous food, eggs, and afterwards fish. Care should be taken not to resume meat too soon. Opium or morphia should be used to allieve the pain. In hyperpyrexia, external cold, in the form of the bath, the wet sheet, or the ice-pack, is to be at once employed.

Dr. Donald Hood (*Lancet*, 1888, i. p. 715), in a paper read before the Medical Society of London, publishes a most valuable

analysis of 2,200 cases of acute sthenic rheumatism occurring in both sexes under 36 years of age. The cases were collected from the records of Guy's and St. Bartholomew's Hospitals. The statistics showed clearly that the salicylates had great power in relieving pain; of 728 patients treated with salicylates, 582 lost their pains in 7 days, while of 612 treated otherwise, only 140 lost their pain in a similar period. Relapse occurred in many of the cases, accompanied by higher temperature than in the initial seizure, and in most cases by cardiac mischief. Pain and stiffness of joints after the fever had subsided appeared more frequently amongst patients treated specifically than among those treated on general principles. The statistics also showed that the salicylates had no effect whatever in reducing, preventing, or limiting the intensity of cardiac inflammation occurring during the course of acute rheumatism. Patients under the influence of salicylates, having lost their pain and fever, may yet have a sudden rise of temperature amounting to hyperpyrexia, accompanied by delirium of a furious character. Such cases occurred, even though the drug had been given in large doses frequently repeated. In another series of cases alarming symptoms had ceased when the drug was withdrawn, and in a few cases very small quantities of the remedy had caused grave cardiac depression. It was hence concluded that "in salicylates we have no safeguard against hyperpyrexia, and that when a patient treated with these remedies has a rising temperature, the drug should at once be discontinued, and other methods adopted for controlling this dangerous complication." Relapses, after the use of salicylates, were often accompanied by a temperature higher than that of the initial attack. The salicylates were not found to be specifics for acute rheumatism but merely relieved the pain. In the acute rheumatism of child-life the salicylates were not considered advisable, since they tended to produce cardiac debility. The cases of rheumatism occurring in early adult-life may be divided into three classes:—1. Acute sthenic rheumatism, which is benefited markedly by salicylates. 2. Subacute attacks less severe than the preceding, and having a prolonged invasion period; these may be treated by salicylates as anodynes, but a general tonic treatment should also be given. 3. Rheumatism in the subjects of unstable nerve power; in these cases the salicylates—by reason of their tendency to produce delirium—are inadmissible. In acute rheumatic attacks of late adult-life, salicylates should be discontinued when any severe cardiac or pulmonary inflammation makes its appearance as a complication.

In the discussion following the reading of Dr. Donald Hood's

paper at the Medical Society of London (*Brit. Med. Journ.*, 1888, i. p. 354), Dr. Whipham said that he also had observed that the salicylates were rather anodynes than curative agents, and that relapses were common after their use if special care were not taken. He recommended their combination with alkalies, and found that when the drugs were so given, relapses were rare. The best remedy for delirium was alcohol. Dr. Wickham Legg and Dr. Archibald Garrod mentioned instances of poisonous symptoms appearing after the use of salicylates, the latter having noticed that such toxic effects occurred in epidemics.

An important communication upon acute rheumatism is the Report of the Collective Investigation Committee, published during the year (*Brit. Med. Journ.*, 1888, vol. i. p. 394). For details the original report must be consulted, but with regard to treatment, which alone interests us here, it is very difficult to draw conclusions in view of (1) the insufficient dose of salicylates given in most cases; (2) the varying number of cases treated by the respective drugs; and (3) the differing characters of the cases.

2. Salicylic acid and salol in acute rheumatism.

In the last issue of the "Year-Book" a complete account was given of the observations which had been made up to that date upon the relative value of these agents in the treatment of rheumatism. During the year occasional reports have been published which, for the greater part, have not advanced our knowledge. A paper of some value, however, has been published by Aufrecht, of Magdeburg (*Deutsch. med. Woch.*, 1888, p. 23, and *Centralbl. f. klin. Med.*, 1888, p. 735), which gives some useful information as to the practical employment of the two remedies. Aufrecht confirms the opinions formerly expressed as to salol being of more agreeable taste than other salicylic preparations, causing less stomach-pain and vomiting, and being less liable to produce ear disorders. Even small doses cause the urine to become dark, but this, Aufrecht believes, disappears after a time, and is no contra-indication. In chronic rheumatism, and in some cases of acute rheumatism, salol is more powerful in relieving pain than is salicylic acid. Generally, however, it was observed in acute rheumatism that salicylic acid was quicker in its action than salol. The former remedy could reduce temperature and relieve pain in twenty-four hours, when salol would require three to four days to produce the same effects. Aufrecht, therefore, first reduces the fever with salicylic acid, giving about ninety grains daily, for two days; then he administers the same dose of salol, reducing this in quantity as time goes on.

Lombard (*Bull. Gén. de Thérap.*, 1887; and *Centralbl. f. klin. Med.*, 1888, p. 24) states that salol is inferior to salicylate of sodium as a specific against rheumatism, and that it has no special influence on the course of the disease. It relieves pain quickly, but its power is of shorter duration than that of sodium salicylate, and it is to be recommended on account of its rapid action.

The discrepancy between this and the preceding record is obvious.

Bradford (*Lancet*, 1888, i. p. 1072), from his observations while house-physician to Dr. Ringer, concludes that:

1. Salol is efficacious as an antipyretic in rheumatic fever, but is not so reliable as the salicylate of soda, in consequence, probably, of the actual dose of salicylic acid being smaller in the former drug.

2. Salol does not relieve pain so rapidly as salicylate of soda.

3. Relapses were frequent after the use of salol.

4. Poisonous symptoms were less marked after the use of salol, but only in so far as it is a weaker preparation of salicylic acid than is the sodium salt.

On the whole, salicylate of soda seemed the better remedy.

As pointed out last year, salol contains less of the salicylic element than a similar weight of salicylic acid, and hence their effects in identical doses are not comparable. On the other hand, the large amount of carbolic acid contained in salol is a bar to its massive administration. Salicylic acid can be given in such doses as will overwhelm the pain and fever in the early stages of the disease. Salol may be afterwards of use if any of the bad effects of salicylic acid on the digestive organs are observed.

3. Antipyrin in rheumatism.

Bernheim and Simon (*Bull. Gén. de Thérap.*; and *Lond. Med. Record*, 1887, ii. p. 504) give an account of thirty-four cases of rheumatic affections which they have treated with antipyrin. The daily dose given varied from 30 to 120 grains; in sixteen cases it produced abundant perspiration, and gave rise to nausea in one or two other cases. In six cases only was the effect incomplete or uncertain; and in twenty-eight cases it rendered signal service. The drug was successful in eighteen out of nineteen cases of acute or subacute rheumatism. In twelve cases of apyretic rheumatism it proved useless in two, but in the others great relief was experienced. The results were nil or doubtful in gonorrhœal rheumatism, sciatica, and supra-orbital neuralgia. It was concluded that antipyrin was not a specific, for the swelling of the joints remained, and visceral complications were not prevented. The drug, it was thought, relieved the pain and fever.

Tullio (*Progrès Médical*; and *Bull. Gén. de Thérap.*, Sept., 1888, p. 236) has come to the conclusion, from an observation of twelve cases, that antipyrin does harm rather than good in acute rheumatism. He finds that the pains become more violent, and other joints are affected during its use, that it does not prevent complication, and that in one case of chronic articular rheumatism it caused albuminuria.

The further results of treatment by antipyrin seem to have justified the caution with which the earlier experiments were criticised in a previous issue of the "Year-Book." The drug seems to have gone the way of most of our new remedies, at least in so far as concerns its influence on rheumatism. First it was vaunted as a marvellous specific; then it was thought to be a useful addition to our resources; finally, as seen above, it is believed to do positive harm.

4. Cascara sagrada in rheumatism.

Goodwin (*New York Med. Journ.*, 1888, p. 629) records the good effects he accidentally observed after giving cascara sagrada in rheumatism. Within twenty-four hours there was a marked improvement in every case, although in some instances the salicylates had been administered without effect. The only cases in which the drug seemed to work no benefit were those in which a syphilitic taint was present. The fluid extract was given mixed with an equal quantity of syrup or glycerine, and of this combination thirty to forty drops were administered in water. If the bowels are too freely opened by the drug, one of the preparations of iron may be given at the same time.

Martin (*Lancet*, 1888, ii. p. 420) has used a combination of salicylate of soda and cascara sagrada with good effect.

5. Osmic acid in muscular rheumatism.

Grinevitski (*Practitioner*, September, 1888, p. 198) has previously called attention to the good results he has obtained in muscular rheumatism from the injection of osmic acid into the tissues, employing three to six drops of a 1 per cent. solution. He now reports an obstinate case where, by mistake, he injected twenty-five minims, equivalent to about a quarter of a grain of the pure acid. He expected, of course, severe inflammation and sloughing, but found that when a burning pain, which lasted about two hours, had passed away, great relief from the muscular pains was experienced, and no ill effects were observed. The author now recommends that injections should be commenced with eight minims, and increased up to twenty-five. In this way there is, on the whole, less burning pain produced, since there are fewer punctures, and the cure is more prompt and certain. There are

different susceptibilities to the remedy, and women, especially more easily show its effects.

6. Ichthyol in rheumatism.

Nussbaum (*Zeitschrift f. Therapie*, January 15, 1888) finds that ichthyol contracts capillaries, and so is of use in all diseases in which there is hyperæmia and enlargement of these vessels. It is most efficacious in painful neuralgias of bones, joints, and muscles, accompanied by difficulty in moving. In cases of severe joint inflammation the pain subsided, and afterwards the stiffness gradually disappeared and movements became both possible and painless. He gave the drug in the form of pill, and in doses of 7 grains night and morning. No ill effects were observed, but as soon as the desired effect is obtained its use should be discontinued, so as to prevent the patient becoming accustomed to its influence. Its administration may be recommenced, if necessary, but at the dose previously attained. Von Nussbaum states that he himself, as an experiment, took as many as fifty pills in the day, each pill containing $1\frac{1}{2}$ grains, without any unpleasant symptoms arising.

Lorenz (*Berlin. klin. Wochenschr.*, 1888, No. 29) also recommends the use of ichthyol in the form of the sulpho-ichthyolate of ammonium, sodium, or lithium, in rheumatism and arthritis deformans. The drug is to be given internally in pill form, and applied externally as an ointment made up with lanolin. Meyer (in the same number of the journal) speaks against this treatment. He has tried it in sixteen patients. Three of them complained of great weariness; four suffered from nausea, vomiting, and disagreeable sensations in the throat and unbearable eructations, and all his patients were unwilling to continue its use.

Troup (*Edin. Med. Journ.*, October, 1888, p. 374), in commenting on the above communications, gives his opinion also as against the use of the drug. He has tried it in the Edinburgh Hospital for Incurables, and has not found benefit to arise from its use, but has observed very unpleasant digestive troubles.

7. The electro-vapour bath and massage in rheumatic affections.

Stewart (*Therapeutic Gazette*, 1888, March, April, and June), who is physician to an institution for the therapeutic application of physical agencies, contributes a series of articles upon the combined use of electricity, vapour baths, and massage in various rheumatic affections. The subject is put before the reader very temperately, and the papers are of considerable importance in giving a fair record of work, performed apparently without a prejudicial bias in favour of the methods employed.

The author, wisely, is very careful to state clearly the exact nature of the affection he investigates, the looseness with which the terms "rheumatism" and "rheumatic" are employed rendering this highly desirable.

For *muscular rheumatism* he accepts the description of Flint, and divides the cases in rheumatism of the muscles of the head, of the neck (*torticollis*), of the back (*dorsodynia*), of the loins (*lumbago*), of the thorax (*pleurodynia*), of the shoulder (*scapulodynia*), of the extremities, of the abdominal muscles, and the visceral muscular structures. The treatment recommended is the following:—The patient, supposing the case to be one of head-rheumatism, "is placed in a steam-box, with his feet in a foot-tub of water as hot as can be borne, and the lid closed down, allowing the head to project into the open air through the hole provided for the purpose. The foot-tub is connected with the battery. The operator stands at the side of the apparatus with the other electrode in his left hand." With the right hand he applies to the patient's head the gentlest form of massage ("*effleurage*") while the temperature of the steam in the box is rising and the patient is in a profuse perspiration. The *rose-douche*, at a temperature between 60° and 70° F., is now applied for a few seconds until reaction is established. The patient is then dried rapidly, wrapped in a sheet and blanket, and allowed to rest on a couch for five or ten minutes, the *séance* so far occupying from five to fifteen minutes, according to the strength of the patient. In some cases it is necessary after the application of electricity to apply "*petrissage*," or kneading, and "*tappotement*," or tapping. The faradic current is usually sufficient, but occasionally the constant current is better borne; and in some cases, especially in head-rheumatism, a combination of the faradic and galvanic currents is best. If, after the bath, reaction should not be well established, Stewart rubs the skin well with alcoholic solution of oil of sassafras. During the course of treatment the general health must be attended to, and anæmia, if present, treated in the ordinary way.

In acute rheumatism the treatment is of no use whatever. In chronic rheumatism of the joints it does good, but it must be remembered that the disease is very chronic in its nature and requires time and patience in its treatment. The treatment should not be given up immediately that the painful symptoms have abated. In sciatica also, and in other rheumatic neuralgias, Stewart reports most satisfactory results.

8. Chronic rheumatism.

Cochrane (*Lancet*, i. p. 15, 1888) records a case of chronic

rheumatism, in which the pain was very severe and did not give way to chloral, bromide of potassium, or morphia. A stay at Strathpeffer Wells relieved the patient somewhat, but the remnants of pain were not removed until salol was administered, when they at once disappeared and have not returned.

9. Rheumatoid arthritis.

Dr. A. E. Garrod (*Med. Chir. Trans.*, vol. lxxi. p. 89) has made an analysis of 500 cases of rheumatoid arthritis, with a view of ascertaining the common relations of aetiology amongst them. The points he brings out are the following:

First, that the causes of rheumatoid arthritis are such as might be expected to act upon the central nervous system.

It is shown here that nervous shock is a most frequent exciting cause of the disease, but, at the same time, the influence of such predisposing causes as rheumatic heredity, the menopause, uterine troubles and injury, are not overlooked.

Secondly, that the distribution of the joint lesions is such as would be likely to result from nerve disturbance; and,

Thirdly, that the distribution of the lesions is similar to that of certain arthropathies of spinal origin.

The symmetrical onset and progress of the disease, and Charcot's observation of a tendency of the affection to spread from the periphery towards the trunk, are urged as supports to the two latter theses.

In a later paper (*Med. Chir. Trans.*, lxxi. p. 265), Dr. Garrod considers the muscular atrophy, the change in the knee jerks, the distortions, glossy skin, and alterations of the nails, in so far as they may support his view of the nervous origin of rheumatoid arthritis, and comes to the conclusions that:

1. The ordinary muscular atrophy of rheumatoid arthritis is merely an example of reflex arthritic muscular atrophy, with which it agrees in its distribution and in its association with increased myotatic irritability and muscular spasm.

2. That the remarkable distortions met with in this disease, being due to the muscular spasm, are merely secondary phenomena; and being, like the muscular atrophy, in no way peculiar to rheumatoid arthritis, can supply no argument for or against its nervous origin.

3. That peripheral neuritis, which has been shown to be present, plays an as yet undetermined part in the production of the phenomena of the disease; that it may, perhaps, be responsible for the irregular results of examination of the tendon-reflexes; that it may give rise to certain sensory phenomena which are often early, if not primary symptoms; and probably is the cause of the

dystrophic condition of the skin and nails occasionally met with.

10. Sciatica.

The nature of sciatica is of some importance in determining its treatment. Two views, mainly, have hitherto been held: firstly, that it is a simple neuralgia; secondly, that it is due to an inflammation of the nerve or of its sheath. Nonne (*Centralbl. f. Med. Wiss.*, No. 29, 1888, p. 560) reports a case of typical genuine sciatica in which the muscles supplied by the affected nerve showed this reaction of degeneration. He believes, therefore, that he had to do, not with a simple neuralgia, but with a slight neuritis; and also considers that in other cases of so-called simple neuralgia there is really a neuritis.

The grounds upon which Nonne draws his conclusions are but slight, but the view he supports has many *prima facie* recommendations. If sciatica is due to a neuritis, surely it is wrong to treat it, at any rate in the early stages, by strong electric currents. These may be of use in the later stages, but I have more than once seen harm done by them when employed too early.

Eccles (*Practitioner*, Nov., 1887, p. 321) contributes an account of several cases treated by him with massage, rest, and position. In four of the cases Mr. Eccles believes that there was undoubted neuritis; in five, neuralgia in other parts indicated that the sciatica also was of neuralgic nature, while there was no tenderness along the course of the nerve and no increase of pain when the nerve was rendered tense. The first case reported was very severe, and had been treated for six weeks by poultices, blisters, morphine, and the actual cautery, but without relief. The affected limb was an inch greater in circumference than that of the opposite side, and the tenderness on pressure seemed to counter-indicate massage. Nevertheless, at the patient's urgent request, *effleurage* was practised, at first very gently, in the course of the nerve; afterwards the more severe degrees of the process were applied to the whole limb, and, finally, to the whole body. In the meanwhile, however, it must be noted that the patient was rigidly confined to bed, the limb wrapped in flannel and hung in a Salter's swing. At the end of five weeks of treatment the patient was allowed to get up, and the treatment was continued until the end of eight weeks. The second case came under treatment at the end of a fortnight; no improvement was noticed for twelve days, but a cure resulted in twenty-five days. In the third case massage was commenced on the eleventh day, and, after four weeks of the massage, rest, and position treatment, the

patient was free from pain. The fourth case was, again, very severe, and had been unrelieved by a few weeks of the ordinary treatment. Massage was then employed, and practised until a cure resulted at the end of twelve weeks.

It will be observed that in these four cases, all of severe type, and due, as Mr. Eccles believes, to neuritis, the massage treatment was not applied in the early stages of the disorder, although I do not find any expression of opinion against its early employment. Without experience of the method in the acute stages, I should nevertheless doubt the wisdom of its application until the more acute symptoms have passed away. Later on, massage is of great use in preventing a relapse into chronicity, which is so common after severe attacks.

Mr. Eccles thinks that massage in these cases acts by promoting absorption and dispersion of the lymph and other inflammatory products which accumulate in the nerve sheath and other parts of the limb. Therefore the rubbing should be first applied to the parts at a distance from the seat of the disease.

In five cases, where the sciatica was accompanied by neuralgia in other parts, the treatment was not found to be of great benefit.

Aschenbach (see *Lancet*, 1887, i. p. 880) has found that salol relieves his sciatica better than any other remedy. He takes first $7\frac{1}{2}$ grains, and later on the same day 15 grains.

Oil of Gaultheria has been used in rheumatic affections by F. X. Dercum (*Amer. Journ. of Nerv. and Mental Diseases*, vol. xiii. No. 1, 1888; also *Practitioner*, June, 1888, p. 466), and has been found especially useful in neuralgias and sciatica. He gave 10 to 20 minims of the oil every three or four hours. Prolonged administration causes gastric irritation.

11. External application of sulphur in sciatica.

Some years ago Guéneau de Mussy mentioned at a meeting of the Therapeutical Society of Paris a treatment of sciatica which he had seen used in England, and which he strongly recommended. This consisted in spreading a thick layer of flowers of sulphur on a large cloth, and wrapping the affected limb thoroughly in this. The sulphur was somehow or other absorbed; of this there was abundant evidence in the odour exhaled from the breath and the urine. Relief from the pain followed the application very rapidly, as a rule in twenty-four hours.

Duchesne (*Journ. de Médecine*, Jan. 15th, 1888) again speaks highly of the treatment, and quotes, among others, the following case :—

A lady, aged 48, had been troubled for some time with obstinate and violent sciatica, for which many remedies had been

tried in vain. The limb was embedded in flowers of sulphur, and covered with a cloth. The next morning the pain had disappeared, and no relapse was experienced.

Cowden (*Journ. of the Amer. Med. Assoc.*, July 7, 1889, p. 13) reports a case which he treated successfully by this method. J. R., aged 45, had been suffering from severe sciatica for two months, for which injections of morphia had to be given to procure temporary relief. The limb was enveloped in dry sulphur. In two hours the patient was asleep and perspiring profusely. The next morning the pain had disappeared, another application of the sulphur was made, and no further return of the complaint was observed for a fortnight. Then a relapse occurred from exposure to a draught, but was at once relieved by similar treatment.

12. Influence of drugs on the excretion of uric acid.

A. Haig (*Med. Chir. Trans.*, lxxi. p. 125) in former papers has shown that a certain headache coincides with increased excretion of uric acid in the urine, and probably to its increased presence in the blood; that alkalies increase the excretion of uric acid and also increase the headache, while acids diminish the excretion of uric acid and relieve the headache. He now finds that salicylic acid does not obey the ordinary rule of the acids. This drug increases the excretion of uric acid, even though the acidity of the urine be very great. To this fact Dr. Haig attributes its beneficial effect in gout and rheumatism, since salicylic acid would prevent the morbid acid of the disease producing retention of uric acid. It is propounded that salicylic acid has the power of splitting up uric acid, and combining with its glycerine so as to form salicyluric acid, which is more soluble than uric acid in most media, and more easily removed. There is some doubt, however, in the latter part of Dr. Haig's paper as to the mode in which the salicyluric acid is removed, whether without change, or by being re-changed by the kidneys into uric acid.

In a later paper (*ibid.*, p. 283) Dr. Haig shows that certain drugs, such as lead and iron, known to do harm in gout, cause a retention of uric acid. Lithia, also, he finds causes retention of uric acid, and, while he disparages its beneficial effect in gout, he shows that it forms an insoluble compound with phosphate of ammonia and soda, and withdraws from the blood phosphate of soda, which is a solvent of uric acid. He finds also that sodium phosphate, taken in one-drachm doses three times a day, prevents lithia causing retention of uric acid.

13. Morphine in gout.

Simmons (*New York Med. Rec.*, Oct., 1887, p. 485), in opposition to generally received views, recommends the injection of morphine beneath the skin, just outside the red zone of the inflamed gouty joint. One injection is, he asserts, usually sufficient during the attack. But what of the after effects? We note that the observer has used the treatment *for years* in his own case (!)

Monin (*L'Union Med.* July; and *Med. Chron.*, Dec., 1887, p. 230) suggests as an application to gouty joints a collodion made according to the following formula:—

Collodion flex.	} aa 15 parts.
Ether. sulph.	
Acid. salicylic.	4 parts.
Morph. hydrochlor.	1 part.

14. Colchicin in gout.

Laborde and Hondé (*Rev. Gén. de Clinique et de Thérap.*, Dec. 29, 1888; also *Lond. Med. Recorder*, 1888, p. 63) state that colchicin, the active principle of *colchicum autumnale*, is more constant and reliable in its effects than the crude drug when used for the relief of gout. It is made up in granules, each containing 1 milligramme = $\frac{1}{80}$ grain. To avert a threatened attack, as soon as the first symptoms are manifested, the authors give 3 granules at intervals of 2 hours; the second day, 2 granules; and the third day, 1 granule. If necessary, another dose may be given on the fourth day. The drug is said to be equally beneficial in cases of well-marked gout with well-declared symptoms. Several days must be allowed to elapse between each series of granules.

15. Watering places for gout and rheumatism.

Sir Spencer Wells (*Brit. Med. Journ.*, 1888, i. p. 945) gives an account of the Baths of *Pistyan*, which have a reputation for the cure of gout and rheumatism and chronic joint affections. *Pistyan* is in Hungary, and is reached by railway from Vienna, being about 50 miles from Pressburg along the valley of the Waag. The cure consists of warm baths, mud baths, and a mineral water for drinking, which is hot (132° and 147° F.), contains a small amount of sulphuretted hydrogen and is slightly acid. It also contains free carbonic acid, sulphurous acid, with lime, soda, potash, and magnesia, and a trace of phosphate of iron. The mud, however, has a much stronger odour of sulphuretted hydrogen than has the water. Sir Spencer Wells reports that the effects of the treatment are better even than were reported to him in England.

Gibbons (*Lancet*, 1888, i. p. 1126) points out the advantages offered by the baths of *Hammam R'hira*, in Algeria, to patients suffering from gout or rheumatism. The baths are two large swimming-baths, containing water at a temperature of 107° F. and 110° F. respectively. A patient stays in the bath about 10 minutes, and afterwards reclines in a hot room. The water contains as its principal ingredient sulphate of lime, thus resembling the Bath water. Further, a chalybeate spring is also found at Hammam R'hira, which is of great service in helping the cure of chronic rheumatism associated with anæmia. Dr. Gibbons states that he has had striking testimony of the efficacy of the baths in chronic rheumatism and gout. The best months for visiting this resort are October, November, and December, but the end of December and the month of January are to be avoided. Thus Hammam R'hira is available at a time of the year when the European resorts are not to be recommended. The place is reached from Algiers by rail (about 60 miles) to Bou Medfa, whence a conveyance takes the traveller to the hotel, a delightful drive of about eight miles. We must presume that the water in the first instance is drunk, and in the second bathed in, at a temperature somewhat lower than that at which it leaves the spring.

ANÆMIA AND ALLIED CONDITIONS.

BY SIDNEY COUPLAND, M.D., F.R.C.P.,

Physician to the Middlessex Hospital.

1. Nature of pernicious anæmia.

Since every advance in the knowledge of the nature of obscure diseases must have some bearing upon their treatment, a brief allusion to the important work of Dr. William Hunter (*Lancet*, 1888, Sept. 22 and 29, Oct. 6; and *Pract.*, Aug., 1888) may not be deemed out of place in this record. Dr. Hunter's research embraced a careful study of the histo-chemical changes in the viscera (notably the liver and spleen) in this disease, as compared with the conditions found in simple or symptomatic anæmia; and also an extended experimental inquiry, which has led him to draw conclusions not only upon pernicious anæmia, but also upon paroxysmal hæmoglobinuria. Briefly, he finds evidence that, clinically and pathologically, pernicious anæmia is to be regarded as a distinct disease—a variety of idiopathic anæmia; and therefore does not consider that a simple anæmia can become pernicious. Consisting essentially in an excessive destruction of blood, anatomically marked by the presence of a large excess of iron in the liver (a condition not found in any variety of symptomatic anæmia), it is inferred that the disintegration takes place mainly in the portal circulation, and that it is due to the action of "certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract." In hæmoglobinuria—the corpuscular disintegration seems to occur in the general circulation, "the seat of the destruction and the form assumed by the hæmoglobin in being set free," determining the occurrence or not of this symptom.

2. Pernicious anæmia and the bothriocephalus latus.

In the "Year-Book" for 1886 (p. 82) reference was made to the view advanced by Runeberg as to the dependence of pernicious

anæmia upon a tapeworm — *bothriocephalus latus*. He found this parasite (which is very common in Finland) in an excessive proportion of cases of this disease, and declared that anthelmintic treatment cured the anæmia in such cases. Schapiro, of St. Petersburg (*Zeitsch. f. klin. Med.*, Bd. xii. p. 416, 1888), reports the case of a lad who presented all the symptoms of pernicious anæmia, with a reduction in corpuscular richness to 16·7 per cent., and of hæmoglobin to 3 per cent., and in whom the expulsion of a tapeworm was followed by rapid recovery. It is suggested that the parasite, under certain conditions, can produce some chemical substance which acts upon the blood.

[These cases are, therefore, consistent with Dr. Hunter's theory of the intestinal origin of the hæmolytic agent.]

3. Etiology and treatment of chlorosis.

In a paper read before the Medical Society of London, Sir Andrew Clark (*Lancet*, Nov. 5, 1887; and *Med. Soc. Trans.*, vol. xi.) argued in support of the theory that anæmia or chlorosis in girls is due to fæcal poisoning. He pointed out that at the period of life at which chlorosis develops, the physical, mental, and moral changes are such as to favour a neglect of attention to regular habits, and that fæcal accumulation is a frequent concomitant of chlorosis. Bouchard's work on "Self-Intoxication" proves the adequacy of the view that the blood may be profoundly influenced by the absorption of products of such retention. Other theories on the etiology of chlorosis are inadequate, *e.g.* the developmental theory of Virchow; the theory of M. Sée, that the organism is unable to cope with the demands made on it by the advent of menstruation; and the theory of Zander, that chlorosis is due to mal-assimilation of iron from deficient secretion of hydrochloric acid. Collateral proof of the correctness of his view is, in Sir A. Clark's opinion, afforded by the success attending a line of treatment directed to secure regular action of the bowels. He gives full directions as to personal hygiene, clothing, and diet, and prescribes an "old-fashioned ferruginous cathartic," such as sulphate of iron and magnesia, or sulphate of iron with sulphate and carbonate of soda, or an iron pill with meals and a saline aperient in the morning. He declares that Bland's pills are no substitute for the cathartic combination.

[The efficacy of mild purgation in the treatment of chlorosis is well recognised, but it is difficult to apply the ingenious theory propounded by Sir Andrew Clark to all cases; and indeed, if correct, it is surprising that chlorosis is not more common even than it is. Bouchard also regards chlorosis as the result of "self-intoxication," not from fæcal poisoning, but from the products of

fermentation in a dilated stomach—a view which appears to be less rational than that of Sir A. Clark, who has a supporter in Duclos (*Rev. Gen. de Clin. et de Thérap.*, 1887, No. 37).]

4. The value of Bland's pills in chlorosis.

The efficacy of large doses of sulphate of iron in chlorosis is universally acknowledged; and there is no more suitable method of its administration than by Bland's pills.

The following case (*Bericht. der K. K. Krank. Rudolph-Stiftung*, Wien, vom Jahre, 1886, Wien., 1887, p. 279) is interesting for the rapidity with which the blood regained its normal composition. The patient—a girl, aged fifteen—had suffered for three weeks from pallor, weakness, dyspnoea on exertion, etc., and was admitted into hospital on December 20, 1885. There was evidence of cardiac dilatation, and a soft systolic basic bruit was present. The red corpuscles amounted to 2,501,000 per c.mm., or about 50 per cent. of normal. Bland's pills, at first six and in a few days nine, daily, were prescribed to be taken at meal times. On January 3rd, the red corpuscles numbered 3,750,000 per c.mm. (*i.e.* 75 per cent.), the cardiac dulness had receded from the right border of the sternum to mid-sternum, and the jugular hum had become inaudible. On January 11 the corpuscles were 4,965,000 (almost normal), and the percentage of hæmoglobin was normal, although the patient was still feeble and weak. She was discharged on January 13, the pulse being much stronger, tracings taken at intervals showing an increase in pulse-tension corresponding to the increase in corpuscular richness.

[As a rule there is not much deficiency in the number of corpuscles in chlorosis, it is the hæmoglobin that is so much diminished. Von Ziemssen writing on this subject (*Munch. Med. Woch.*, 1887, No. 37), believes that iron, given internally or subcutaneously, in this disease is directly utilised in reinforcing the hæmoglobin.]

5. Ferruginous mineral waters in anæmia.

Dr. Carl Reini, of Franzensbad (*Eger, Austria*)—a health resort containing nine springs, of which Glauber's salt is the chief mineral constituent, but also mostly containing a fair proportion of iron-salts—attempts to estimate the value of these mineral waters as a therapeutic agent in anæmic conditions (*Zeit. f. Heilk.*, May, 1888, Bd. ix. p. 185). He remarks at the outset that the number of cases of "false anæmia" is probably larger than is generally admitted, for mere pallor may co-exist with a normal composition of the blood as regards corpuscles and hæmoglobin. Neurasthenic and hysterical patients often present this pallor,

and he gives first a series of such cases of "pseudo-anæmia," in whom the hæmoglobin exceeded 90 per cent. of the normal. These patients had no cardiac symptoms; and all did well on ferruginous waters. They all presented nervous symptoms, subjective or objective, the most frequent being hemicrania, and he suggests that the pallor may be due to excitation of the vaso-constrictor nerves. He next speaks of cases of true anæmia and chlorosis, studying the action of the mineral waters—1st, in those who, whilst under treatment, made no change in their mode of life or occupation; 2nd, those treated in hospital; and 3rd, those who came to Franzensbad for the "cure," classifying the last-named group into—*a*, cases of chlorosis, with less than 60 per cent. of hæmoglobin; *b*, ditto, with more than 60 per cent. of hæmoglobin; and *c*, cases of secondary anæmia. Tables are given, in which the effect of the treatment is noted in each case, by estimation of the corpuscles and hæmoglobin. It should be added that a few of the patients took Levico (S. Tyrol) water, which contains a minute quantity of arsenic as well as iron, but, whether this or the saline and ferruginous waters of Franzensbad were taken, the result was equally favourable. As might have been expected, the good effects were most pronounced in those who were treated in hospital, or who had come "into residence" at the Spa; whereas those who remained about their usual vocation whilst taking the waters were not so speedily or thoroughly benefited. Bathing was a useful adjuvant, especially in baths intended to promote "stimulation" of the skin; indeed, some chlorotics so treated showed a notable increase in hæmoglobin, without taking iron. Dr. Reinl controverts the assertion of Valentiner that the efficacy of the Franzensbad springs in these cases is less marked than that of the more highly ferruginous waters of Schwalbach and Pyrmont.

6. Arsenic in leukhæmia.

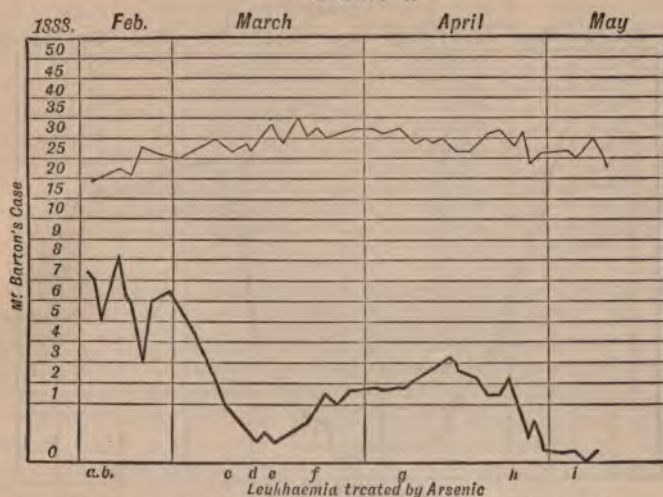
Mr. E. Barton (*Therap. Gaz.*, Sept. 15, 1888) records a case of leucocythæmia in which notable improvement followed the free administration of arsenic. The patient, a gardener, was admitted into University College Hospital on February 13, 1888, under the care of Dr. Ringer. He was thin and pale; the spleen extended from the spine to below the umbilicus, one inch to the right of the middle line, its lower limit being one inch above Poupart's ligament. There was some tenderness over the sternum. No enlarged glands. A mitral systolic murmur at apex, and a pulmonary bruit at base. Slight pyrexia (T. 100°). On Feb. 20 the red corpuscles were 38 per cent. of the normal, and the proportion of white to red was 1:2.5. Liq. arsenicalis η v. and

quin. sulph. gr. 3 ter die were prescribed. Two days later the quinine was omitted, and the arsenic increased to $\mathfrak{m}\mathfrak{x}$., and then quickly pushed to $\mathfrak{m}\mathfrak{x}\mathfrak{v}$. four times a day. On March 10 he was taking as much as $\mathfrak{m}\mathfrak{x}\mathfrak{x}\mathfrak{v}$. four times a day; the red corpuscles numbered 55 per cent., and the proportion of white to red had fallen to 1:20. After five days the arsenic had to be discontinued, owing to diarrhœa. On March 17 the percentage of hæmoglobin was 40; the spleen notably smaller and harder. A boil appeared on the upper lip, became carbuncular, and led to an attack of facial erysipelas, during the progress of which arsenic was discontinued, and 10-minim doses of tinct. ferri. perchlor. given every hour. During the attack the red corpuscles were 66 per cent., but the number of white corpuscles gradually increased. The patient recovered from the erysipelas within a week, but shortly after (April 5) began to suffer from an eruption of carbuncles on the perineum, which caused frequent losses of blood. Sulphide of calcium was given. The percentage of red corpuscles fell to 50; and on April 11 the proportion of white to red had risen to 1:9, whilst the spleen had again enlarged. He was now given liq. arsen. $\mathfrak{m}\mathfrak{x}\mathfrak{v}$. every six hours, the dose being rapidly increased to $\mathfrak{m}\mathfrak{x}\mathfrak{x}\mathfrak{i}\mathfrak{i}$. This had the effect of reducing the relative proportion of white corpuscles to nearly normal limits (1 to 300 or 400), the addition of iron causing also a slight increase in the number of red corpuscles. On May 3rd arsenic was discontinued; and when he left the hospital, on May 7, the red corpuscles numbered 4,690; the proportion of white to red was 1:350; and the percentage of hæmoglobin was 25 to 30. The administration of arsenic had produced marked cutaneous pigmentation, especially over the belly and the bony prominences. [See Chart 1.]

7. Treatment of leukaemia by oxygen.

A very elaborate and exhaustive study of a case of leukaemia is given by Dr. G. Sticker, of Cologne (*Beitrage zur Pathologie und Therapie der Leukämia*, *Zeits. f. klin. Med.*, Bd. 14, Hft. 1, 2, 1888). The case is viewed from every aspect—clinical, pathological, physiological, and therapeutical; but it is for the last point alone that it can be mentioned here. It is of especial interest in the fact that the case was treated for a long period by inhalation of oxygen, the introduction of which by Kirnberger has been noticed in a former "Year-Book" (1884, p. 89). Sticker says that it was Kirnberger's case that suggested the use of this method in the present instance. The patient was a waiter, twenty-five years of age, who, in the early part of 1885 had been under treatment at the Cologne Hospital, and on April 30 was admitted, under the care of Professor Riegel, at Giessen. He had

CHART 1.*



This Chart illustrates Mr. Barton's case of leukhæmia treated by arsenic.

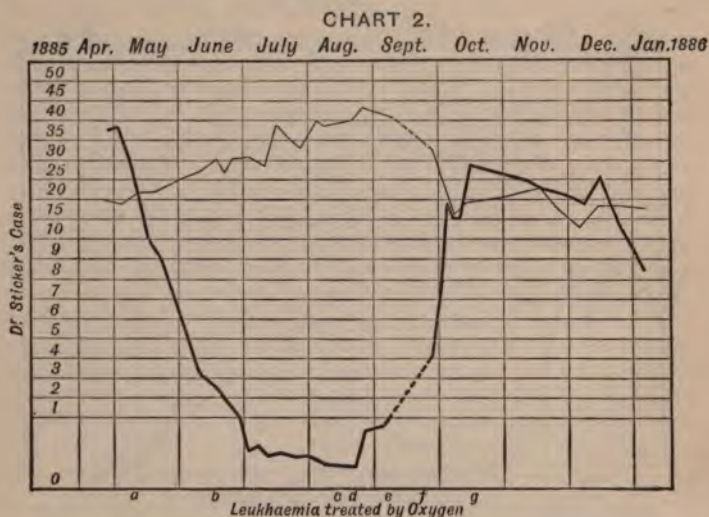
- a. Feb. 20.—Liq. arsen. $\mathfrak{M}\text{v}$.; quin. sulph. gr. 3; ter die.
 b. " 23.—Quinine omitted. Liq. arsenicalis, $\mathfrak{M}\text{x}$. ter die, rapidly increased up to $\mathfrak{M}\text{xv}$. 6tis horis.
 c. March 10.—Liq. arsen. $\mathfrak{M}\text{xxv}$. 6tis horis.
 d. " 15.—Arsenic discontinued.
 e. " 17.—Labial carbuncle, followed by facial erysipelas. Tr. ferr. perchlor. $\mathfrak{M}\text{x}$. hourly.
 f. " 24.—Ferri sulph. gr. 5 ter die.
 April 5 to 20.—Attack of carbuncles on perinæum; hæmorrhage. Sulphide of calcium.
 g. " 11.—Liq. arsenic. $\mathfrak{M}\text{xv}$. 6tis horis, rapidly increased to $\mathfrak{M}\text{xxij}$.
 h. " 29.—Ferrum redactum added.
 i. May 3.—Arsenic discontinued.

been failing in strength for over two years; and when in the Cologne Hospital in January to February, 1885, the existence of well-marked leukhæmia, with an enormously enlarged spleen, was diagnosed. He was treated with arsenic (only in 3-minim doses), and left no better. At Giessen he was at once prescribed liq. arsenicalis $\mathfrak{M}\text{v}$. ter die; examination of the blood showed 1,980,000 red corpuscles per cub. mm. (*i.e.* 30 per cent.), and 3,735,000 white corpuscles, so that the proportion of white to red was as 1:0·5. On May 4 treatment by inhalation of oxygen was

* Both this Chart and that on the next page are greatly reduced from the originals, as well as somewhat modified in plan. The reduction necessarily entails the fluctuations in the number of corpuscles being less strikingly shown than in the originals. This is particularly so in Mr. Barton's case, where enumerations were made daily.

The numbers represent the number of corpuscles per hemocytometer square, and if multiplied by 100,000 would give the total number per cub. mm. of blood. The normal average in this amount of blood is—red corpuscles, 5,000,000; white corpuscles, 12,500 (about).—Rep.

The thin line refers to the red corpuscles; the thick line to the white corpuscles.



This Chart illustrates Dr. Sticker's case of leukhaemia treated by inhalations of oxygen.

a. From May 5 to June 19.—Daily inhalation of 30 litres of O_2 .

b. " June 19 to Aug. 17.—" " " 60 " "

c. " Aug. 17 to Aug. 24.—No inhalations.

d. " Aug. 24 to Sept. 6.—Daily inhalation of 60 litres of O_2 .

e. " Sept. 6 to Sept. 26.—Patient on furlough (no treatment).

f. " Sept. 29 to Oct. 24.—Daily inhalation of 60 litres of O_2 .

g. " Oct. 24.—Inhalations at irregular intervals.

Arsenic was also administered in the early months, thus :—April 30, *Liq. arsenicalis*, m.v. ter die ; May 19, *Liq. arsenic.* m.vij. ter die ; June 4, Arsenic discontinued; June 19, *Liq. arsenic.* m.vij. ter die ; Aug. 6, Arsenic discontinued; Aug. 17, *Liq. arsenical.* m.vij. ter die ; Aug. 23, Arsenic discontinued.

commenced (Limousin's apparatus was used, in which the oxygen on being generated passes through baryta water to be freed of chlorine). The amount inhaled was 30 litres per diem. It was well borne, and was accompanied by relief to breathing. Until June 4 arsenic (which had been increased to m.vij. ter die) was continued, and then omitted for a week, after which it was resumed (in doses of 8 minims). On June 19 the daily amount of oxygen inhaled was increased 60 litres, which was continued regularly for two months, when, owing to the apparatus getting out of order, the administration was suspended for a week (Aug. 17 to 24). The effect of this treatment upon the condition of the blood was remarkable, as seen from the following figures (also see Chart 2):—

<i>Date.</i>	<i>No. of red corpuscles per cub. mm. of blood.</i>	<i>No. of white corpuscles per cub. mm. of blood.</i>	<i>Proportion of white to red corpuscles.</i>
May 5	1,950,000	3,743,000	1:0.521
" 22	2,240,000	1,120,000	1:2
" 27	2,420,000	834,000	1:2.9
June 18	3,040,000	304,000	1:10
" 27	3,080,000	140,000	1:22
July 8	2,800,000	46,500	1:60.2
" 16	3,960,000	43,500	1:68
" 28	3,300,000	41,200	1:80
Aug. 12	3,980,000	33,100	1:120.2
" 22	4,460,000	33,200	1:130.2

The spleen had continued to increase in size; and at the end of July the patient had a slight attack of dry pleurisy. But he had gained in strength, and was able to be up from four to five hours daily. On Sept. 6 he went home on furlough, and seemed to benefit by the mountain air. At the end of three weeks he returned, looking well, but presenting greater enlargement of the spleen (which now reached for a hand's breadth to right of middle line), some enlargement of liver, and a trace of albumen in the urine. The number of red corpuscles had fallen to 3,420,000, that of the white had risen to 422,000, the relative proportion of white to red being now 1:8.1, or five times as great as before he went out on leave. The inhalations were resumed, but without any effect on the leukhæmic condition; arsenic was again prescribed, both by the mouth, and for a few days (in October) hypodermically. The oxygen was omitted on Nov. 24, resumed on the 29th. On Dec. 16 he got relief to his dyspnoea from tinct. quebracho; but the disease continued to progress, the white corpuscles for most part outnumbering the red, the spleen and liver coming to occupy nearly the whole of the belly, frequent epistaxis, leukhæmic retinitis, deafness, vertigo, and other symptoms, occurred, death taking place on Jan. 8, 1886. The post-mortem examination, in addition to the "splenic and myelogenic leukhæmia," showed great enlargement of the liver, dilatation of the heart, broncho-pneumonia, nephritis, slight ascites, and anasarca.

Speaking of the action of the oxygen inhalations in this case Dr. Sticker points out that duty to the patient compelled the administration of arsenic at the same time, which necessarily impairs the inference to be drawn from the former method. But he was intolerant of large doses of arsenic, nor was it given so continuously as the oxygen. It is difficult to attribute the marked improvement from May to September to anything but the oxygen inhalation; and it is noted that the relapse in

the early days of September followed soon after the temporary abeyance of the inhalations. The improvement could not be attributed to the changed surroundings and diet, nor to the season of the year, nor to the arsenical treatment, but yet, if it were due to the oxygen, why did it not continue? To this question Dr. Sticker replies by the assertion that the action of any remedy is extinguished by the lapse of time, the organism becomes blunted to it; and in cases where there is a permanent harmful factor in operation (here the splenic tumour) amelioration, and not a cure, could alone be expected. To the theoretical objections, that the addition of 30 or 60 litres of oxygen to the daily amount required by the organism is trifling in comparison with the total need, he argues that in disease, especially when the white corpuscles are in excess, the administration of pure oxygen, even for a short time, spares the vital powers of the organism. It seems probable, from experiments, that in leukaemia the white corpuscles retain oxygen, and use it up in the blood. If the white corpuscles do thus absorb oxygen, it must be at the expense of the red corpuscles, so that the administration of the gas might be expected to restore the normal condition, as well, perhaps, as aiding in the conversion of white into red corpuscles. [From careful analysis of the urine in this case, it could not be said that the oxygen promoted tissue-metabolism.] At any rate, this case, as well as Kirnberger's, suggest the prescription of oxygen-inhalation in a disease rarely amenable to any treatment.

In connection with the case recorded by Mr. Barton (*vide supra*), it is interesting to note that Dr. Sticker says that the employment of arsenic did not appear to exert any influence upon the progress of the disease, the condition of the blood and spleen, nor upon metabolism. But then this patient never received the heroic doses prescribed in Mr. Barton's case. Sticker reminds us that Laache concluded from careful observation that arsenic in leukaemia destroys the white corpuscles, at least temporarily, but that he could find no evidence of any action upon the red corpuscles. Delpesch and Raimond, on the other hand, found, both in health and disease, that the red corpuscles diminished under arsenic, and the white corpuscles, slightly, if at all, increased in number; and the oxygen-capacity of the blood was diminished. Nencki and Silber found no increase in the lowered oxygen-capacity of leukaemics; whilst Meyer and Seitelberg observed the formation of lactic acid in the blood, and diminished oxidation, under the influence of arsenic. All of which goes to show that further inquiry into the action of this valued *remedy is much needed.*

8. The action of iron.

In the paper above quoted (No. 5) Dr. Reil alludes to the mode of action of iron in anæmia, with especial reference to the well-known fact that cases do better when treated with large doses of the metal far in excess of the physiological need. This indicates that iron must be of value from its indirect action on the gastro-intestinal tract, and not solely from the amount absorbed—a view long since advocated by Bucheim, and lately revived by Kobert.

Hugo Schulz (*Thérap. Monats.*, Jan., 1888) details an experimental investigation in which the subjects were four healthy young men, who took a certain quantity of iron (0·5 per cent. of the perchloride) daily during a period of four weeks, the dose being increased every week. In the first week the total amount given each subject was 0·0525 grm. of iron; in the second week, 0·105 grm.; in the third and fourth weeks, 0·1575 grm., so that about half a gramme was administered during the whole period. Each subject experienced similar effects—gastric fulness and tenderness being early developed, then evidence of vaso-motor disturbance, as flushing, heat of skin, disturbed sleep; and in the later weeks, conjunctivitis, acne, and furuncles. They all had a sense of increased muscular vigour, and the pulse rate rose notably in each during the experiment. After leaving off the administration of iron, there was a return of gastralgia, with anorexia, great lassitude, and somnolence. Pereira noted vascular disturbance to follow the exhibition of iron; and in the cutaneous and conjunctival conditions there is some analogy with the effects of arsenic. That such results should ensue on the administration of comparatively small doses is interesting. It seems to show that the physiological effects of the drug are more likely to follow small doses (perhaps because they are absorbed) than large, when the action is more local,—viz. upon the gastro-intestinal tract. [See "Year-Book," 1886, p. 83.]

9. Transfusion and auto-transfusion.

In a paper on the relative merits of transfusion, infusion, and auto-transfusion, Prof. von Nussbaum (*Thérap. Monats.*, Oct., 1887) points out how various are the opinions held concerning the best methods of transfusion and their utility in saving life in acute anæmia. Transfusion of blood has its objections and dangers—not a slight objection being the time required for its performance. Saline infusion is of value to temporarily fill the emptied vessels with fluid. Prof. von Nussbaum states that he has performed blood-transfusion nineteen times, but in only two cases was life saved by it. One was a case of intestinal hæmorrhage

in a female, who, fourteen years before, had been treated successfully by the same method for the same accident. The other was a case of profound anæmia and uncontrollable vomiting. In the first case the blood was not defibrinated, and was injected by means of an enema syringe; in the other, defibrinated blood, drawn from the Professor's arm (he adds that he has "given" blood on ten occasions, and has been "let blood" twenty-three times without ill result) was used. On the patient the immediate effect was severe headache and convulsions, but in twenty minutes the pulse returned to the wrist. His other cases were puerperal and traumatic hæmorrhages, extreme conditions of anæmia and asthenia. On the whole, he recommends "auto-transfusion," as being more expeditious and safe than either transfusion or saline infusion. It consists in utilising the blood still left in the body by driving it to the medulla and heart. This is effected by massage of the abdomen, followed by the application of a firm compress and bandage, elastic bandages to the limbs, and by keeping the head low.

MEDICAL DISEASES OF CHILDREN.

By JAMES F. GOODHART, M.D., F.R.C.P.,

Physician to Guy's Hospital and the Evelina Hospital for Children.

I. General therapeutics.

Jacobi (*Arch. of Ped.*, 1887) has a series of valuable articles on the therapeutics of infancy and childhood. It is impossible to give any adequate abstract of these, but one or two points that seem peculiarly valuable, and yet generally neglected, may be stated in the form of aphorisms:—

Dietetics must be considered a part of therapeutics.

Infants' food should always be mixed with large quantities of water.

It is probable that the fact seldom occurs to a mother or to a nurse that a child may be thirsty without being hungry. Certainly, many a discomfort and even sickness in a child is conditioned by the fact that it has been compelled to eat in order to satisfy its thirst.

Many are the indications for the administration of water in the diseases of the young. Perspiration, diarrhœa, general inanition, feverish diseases, diminish its quantity in the tissues and blood-vessels, and, by inspissation of the blood, produce convulsions and other grave disturbances, for which the remedy is *water* in sufficient quantities. When the stomach rebels, the hungry lymph-ducts of the rectum will greedily absorb an ounce, or much more, injected every hour or two; and in many a case life is thus saved.

The addition of chloride of sodium to milk prevents solid coagulation by either rennet or gastric juice. Cows' milk ought never to be given without table-salt.

Table-salt influences habitual constipation beneficially, the food being made more digestible, and the serous and glandular secretions of the alimentary canal more effective.

It is very easy to give too much fat.

Alcohol has acquired its place among the medicinal foods in the diseases of infancy and childhood. Contra-indicated in meningitis, acute cardiac ailments, gastro-enteritis, peritonitis, and acute dysentery, it finds its application in depressed strength and vitality, and its most beneficial action is exhibited in sepsis of all forms. It is then almost impossible to give too much. The doses must be watched so as to be sufficiently large. Whoever is not afraid of giving six ounces of whisky daily, and even more when one or two fail, will soon convince himself of its power for good.

Milk and drinking-water are safest when boiled.

Walker, of Spondon, Derby (*Arch. of Ped.*, Sept., 1888), writes a paper (on "Defervescents and the Jugulation of Acute Diseases") advocating the use of "arms of precision;" that is, the pure alkaloids in small doses at frequent intervals. He finds the granules prepared by Chanteaud, of Paris, most reliable (Burgoyne, 16, Coleman Street, London agent). They contain about $\frac{1}{150}$ th grain each of the various alkaloids; and this dose is given as often as every half-hour to quite young children. Frequent resort is made to such uncommon drugs as brucine and veratine, and often such a combination as aconitine, brucine, and veratine, is given.

Other alkaloids in common use with the author are hyoscyamin, emetin, and digitalin; narceine, and codeine; besides of course strychnine, morphine, and atropine. The method is certainly, as the writer contends, the most scientific method of treatment; but it is to be wished that more specific information will be given hereafter upon the particular value attaching to the less common alkaloids when given separately; and this is impossible to obtain as yet because of their frequent combination.

2. Salol in the diseases of children.

Demme (*Théráp. Monats.*, 1888, 2) has administered this drug in six cases of articular rheumatism, two being also cases of acute peri- and endocarditis. In two cases (boys of eight and thirteen years) 45 to 60 grains a day was continued for several days; then, the intensity of symptoms being much diminished, it was reduced to 30 grains, and at last to 15 grains during the convalescence. In a third case the results were still better; in a fourth an urticaria developed. Salicylate of soda was substituted, and acted in a similar manner. In the two cardiac cases salol did not act until the movements of the heart and the vascular tension had been regulated by the administration of digitalis. Salol also proved itself of value in two cases of vesical catarrh.

3. Glycerine enemata.

Dr. G. A. Carpenter (*Lancet*, 1888, vol. ii. p. 905) records the results of a large series of cases at the Evelina Hospital treated for constipation in this manner. Comparing the results with those of aperients, he is very favourably impressed with this enema; it is easily administered, unattended by any pain or discomfort, quick and natural in the response it gives, and failures are but few. The dose is one to two drachms.

4. Diphtheria.

Muñoz (*El Prog. Ginecol.*, abstr. *Archives of Ped.*, Jan., 1888) advocates the use of apomorphia in the asphyxia resulting from false membranes in the larynx. The action of other emetics is interfered with, but this not. The dose should not generally exceed 1 centigramme (say $\frac{1}{4}$ to $\frac{1}{8}$ grain), and other authors advise much smaller doses for fear of collapse and syncope.

Hatfield (*Archives of Ped.*, Feb., 1888) recurs to the old treatment by hydrogen peroxide. He has used apparently the commercial hydrogen dioxide, containing 2.88 volumes of the gas—2 ounces diluted with seven times its bulk of water, and this used as a swab or spray every two hours.

Knapp (*Therap. Gaz.*, March 15, 1888) speaks well of sulphur given internally in glycerine. He gives the following formula:—Pure precipitated sulphur, \mathfrak{z} iss.; chocolate powder, \mathfrak{z} i; cinnamon water (concentrated 1 in 40), \mathfrak{z} i; glycerine to \mathfrak{z} ij.

Half to one teaspoonful every hour or oftener, according to age of patient.

Corbin (*New York Med. Journ.*, March 10, 1888; and *Arch. of Ped.*) recommends mercurial fumigations in laryngeal diphtheria. He volatilises 40 to 60 grains of calomel under a tent every two or three hours during the first day, and then lengthens the interval, resorting to fumigations again if the cough tightens. He has had to continue them for over a week twice or three times a day.

Braddon (*Lancet*, March, 1888) suggests the local application of oil of peppermint to the fauces twice daily, upon the ground that, while perfectly harmless, it is nevertheless a powerful antiseptic.

Jacobi ("Remarks on the Nature and Treatment of Diphtheria," *Brit. Med. Journ.*, Sept. 22, 1888) has an article abounding in good sense. There are no specifics, no panaceas. Chlorate of potassium is a good adjuvant. Give it often and in small doses, if at all; and remember that it may be a poison. There are three great indications to be fulfilled in every case:—Cleansing and disinfection of the surface from which systemic

poisoning may take place; fitting the patient to fight out the disease; and meeting local emergencies. Locally, whatever is done must be done very diligently and indefatigably, but without violence to the sore surface and the patient. No child can withstand the alliance of diphtheria and doctor, or diphtheria and nurse. Amongst the medicines, he has learnt to respect the chloride of iron; the tincture may be given to the extent of a drachm daily to a baby a year old, much more to older children, in very frequent and small doses. In heart failure digitalis, strophanthus, sparteine, caffein, camphor, alcohol, and musk, are all useful, and must not be postponed until feebleness and collapse have set in; and of the same importance are alcoholic stimulants. The author speaks highly of caffein as an excellent cardiac tonic; and the best internal stimulant in very urgent cases is Siberian musk. He gives it from a bottle shaken up with thin mucilage. It ought to be given in sufficient doses at short intervals. When 10 or 15 grains will not restore the heart's action in a child of one or two years in three or four hours' time, the prognosis is poor indeed. Perhaps the most useful internal remedy is mercury—he prefers the bichloride; his experience has been very large, but mainly confined to laryngeal or bronchial cases. The uniform internal administration has been an hourly dose of it. The smallest daily quantity ever given by him has been $\frac{1}{4}$ grain to a baby of four months, which was continued a few days, and then somewhat lessened. Half a grain may be given to children of from three to five for four or eight days, or longer. The doses vary from $\frac{1}{60}$ to $\frac{1}{30}$, and require dilution to 1 in 6,000 or 10,000 of water or milk. There is no stomatitis; gastric or intestinal irritation is very rare. It occurred occasionally when the dilution had not been sufficient; and if ever it exists, small doses of opium will remedy it.

Noel (*Le Concours Méd.*, May 26th, 1888; *Arch. of Ped.*, Oct., 1888) thinks highly of borax given internally. For children under one year the daily dosage is 7 to 15 grains, 15 to 22 grains to those under five years, 30 grains under ten, and up to 75 grains for an adult. The medicine is divided into equal doses for every hour, excepting the child being asleep. The drug produces abundant salivation in a short time. No local treatment of any kind was adopted.

G. Roese (*Thérap. Monatsh.*, 1887, 10) has given oil of turpentine for the last four years. Sixty cases are reported, with five deaths. The oil was given in teaspoonful doses three times a day, and a little ether added to correct the taste. In addition, a dessert-spoonful of a 2 per cent. solution of salicylate of soda was given

every two hours. Under this treatment the fever and frequency of the pulse diminished rapidly, the duration of the disease was shortened, all the general symptoms underwent improvement, and symptoms of asphyxia only proved menacing in one case.

The patients were well supported. No symptoms of intoxication occurred.

E. Rosenthal (*Thér. Monatsh.*, 1888, 5) reports successful results of the local application of a 10 per cent. solution of pyridine, the throat being gargled after with a 3 per cent. solution of chlorate of potash, or an inhalation of a 2 per cent. solution of carbolic acid. The treatment was applied to thirty-eight adults, who all recovered; and to twenty-six children, of whom seven died of laryngeal complications.

Cholewa (*Thér. Monatsh.*, 1888, 6) tried painting the nose in two cases of nasal diphtheria with a 20 per cent. solution of oil of menthol; recovery took place in both, with a rapid amelioration of bad symptoms.

5. Pertussis.

Robison (*Arch. of Ped.*, Dec., 1887) has employed of late a "Semple's atomising inhaler," attaching a tube to it, which can be placed in the child's mouth. He has been successful in relieving the cough and expectoration beyond expectation. The solutions used were:—No. 1, 5 per cent. solution of carbolic acid; No. 2, 5 per cent. solution of eucalyptus oil in liquid vaseline; No. 3, Dobell's solution; No. 4, Keating's solution (thymol gr. xv, alcohol $\mathfrak{z}\text{ij}$, glycerine $\mathfrak{z}\text{ss}$, water $\mathfrak{z}\text{xxxiv}$); No. 5, muriate of cocaine gr. xxv, resorcin gr. xxviiij, water $\mathfrak{z}\text{ij}$. Solutions 1, 2, and 3 were used when the cough and expectoration were not troublesome; in case expectoration was difficult, or the mucus tenacious, No. 3 or 4 was used. If the cough were severe, No. 5 served a good purpose, and it was never necessary to give anodynes internally either to relieve the cough or procure sleep.

Sonnenberger (*Deutsch. Med. Wochensh.*, 1887, 14) advocates the use of antipyrin. He has tried it in about seventy cases in doses of a grain, or something under, in very young children, three times a day, to 15 grains in adults. Its effect was in all cases good.

Wendt (*Philadelphia Med. News*, June 2, 1888) has followed Sonnenberger's directions, giving a seventh of a grain to very young children, and gradually increasing the dose according to the age of the child. The drug was administered dissolved in a little water and raspberry syrup three times a day, and sometimes once at night. It has served him better than any other drug. He claims no cures; but it favours an easy course to final recovery, a

mitigation of the paroxysms and a reduction in their number, and certainly a freedom from complications.

Genser (*Allgem. Wiener Med. Zeit.*, 1888, 15) compares Michael's treatment by insufflations of benzoic acid in 76 cases, the average duration being 43 days, and the distress caused not inconsiderable. Antipyrin, on the contrary, always diminishes the number of coughs in the 24 hours, as well as their duration and intensity. The duration seldom extended over 24 days. The mean dose was a grain and a half per diem for each year of age. In five cases with pulmonary complications the effect was negative.

Antifebrin gave much less favourable results.

Nettier (*Revue Méd. de l'Est*, abstr. *Lancet*, 1888, i. p. 83) recommends the oxymel of squill, with, if necessary, occasional ipecacuanha emetics. The squill should be given on an empty stomach, and as it is only given once a day, the afternoon is chosen, midway between dinner and tea. An ounce and a half is divided into six parts, and one given every ten minutes, until the whole is consumed. The success of this method is attested by **Profs. Remy and Schmidt**, who have used it extensively, besides the author. The preparations used in the oxymel scillitique of the French Codex, which differs somewhat from that of the British Pharmacopœia, and the three authorities all insist on the particular preparation being used.

Widowitz (*Wiener Med. Wochens.*, 1888, 17) has tried the same plan, and he has found the cough diminish in one case from 24 times to 6, in a second from 10 to 2, in another from 23 to 3, in a fourth from 24 to 0, in the 24 hours. He does not think it affects the duration of the malady.

6. Laryngismus stridulus.

Perceval (*Lancet*, 1888, vol. ii. p. 961) has treated 24 cases with antipyrin. One case is given, typical of all. A child 18 months old was seized with dyspnœa during inspiration and convulsions. Ipecacuanha emetics failing, 2-grain doses of antipyrin were given every hour, with the satisfactory result that the difficulty of breathing ceased and the child fell asleep. The same dose was then given every two hours, and the next day the child was well. In only one case did the child require 5 grains.

7. Bronchitis.

Friedländer (*Abstr. Archives of Pediatrics*, April, 1888) speaks well of antipyrin in acute bronchitis, the duration of the disease being shortened from the usual period of two or three weeks to about eight days. It was found most useful when the temperature exceeded 102°, and the drug acts more energetically in the robust and well nourished than in the weak and delicate. The

dose should vary from about 10 to 15 grains from two to five years of age. Its action continues from twenty to twenty-four hours, and it produces profuse perspiration, quiet sleep, easier respiration, less dry cough. With it the author uses wine, tonics, laxatives, and caffeine.

8. Broncho-pneumonia.

Angel Money (*Lancet*, June 2, 1888) has treated many cases of severe broncho-pneumonia in children and infants by means of ice-bags; and he recommends the plan for general adoption, it is so successful. The cause of the disease does not, in his experience, influence the employment of the ice-bag. It may be used with much success even in cases of broncho-pneumonia secondary to tracheotomy; but still more so in cases of influenza and measles.

The chief merit of the treatment consists in the maintenance of the strength not only of the heart, but also of the respiratory centres and nervous and muscular systems. Albuminuria is not made worse; the duration of the disease is, on the whole, shorter, and convalescence is rendered more rapid. The employment of cold does not obviate the necessity for stimulants, but it renders them less necessary.

9. Pneumonia.

Holt (*Med. Record*, April 7, 1888, and reprint), in an article on the cerebral symptoms in the pneumonia of children, wishes to emphasise two points in his experience:—(1) That in hyperpyrexia the cold pack is safe, and the most efficient means to reduce the temperature and thus abate the brain symptoms; (2) that antipyrin is useful, not so much for reducing the pyrexia (for this the cold pack is the safer and more satisfactory), but to allay restlessness, quiet delirium and cough, and promote sleep. For this purpose, doses of two or three grains are sufficient in an infant of from six to nine months; double that dose at eighteen or twenty-four months. The dose may be repeated every six or eight hours.

10. Intestinal catarrh.

Widowitz (*Jahrb. f. Kinderheilk.*, Bd. xxvi. Heft. 3 and 4) discusses the treatment of intestinal diseases by naphthalin; and he comes to the conclusion that, while inoperative in dyspeptic conditions, and where there is much vomiting, it is to be preferred to every other drug in catarrhal conditions, because, by checking fermentation, it prevents the development of chronic catarrh. Five to fifteen grains may be given daily. A combination with alcohol, tincture of opium, and oil of peppermint was well tolerated, and useful also in checking profuse diarrhœa.

11. Habitual constipation in infants.

Eustace Smith (*Brit. Med. Journ.*, July 7, 1888) has a good article on this subject. The varieties of constipation recognised by the author, and their treatment, are as follow :—Infants at the breast are by no means exempt; it is then due to deficiency of sugar in the breast-milk, or to the milk forming a more solid curd than is usual with human milk. A teaspoonful of syrup given three or four times a day before a meal will often quickly restore the normal regularity of the bowels. (On the influence for good in this way of sugar see also Jacobi, *Arch. of Ped.*, 1888.) Constipation is often due to excess of starch, by which means a mild catarrh is set up and maintained. An excess of mucus is generated, and the muscular coat, in consequence, gets no grip of its contents. *Dryness* of stool causes constipation. A baby whose motions are habitually costive will resist the action of the bowels as long as possible, knowing well the pain that it suffers at defæcation; in the same way small fissures are often apt to form, and they tend to make matters worse.

Torpidity of bowels induced by opium is by no means uncommon. If with an inelasticity of skin (when pinched up, it slowly recovers its natural smoothness) there be contracted pupils, and drowsiness, the abuse of narcotics should be considered.

For over-inspissation of the excreta, see that the child has a sufficiency of fluid with his food; and it is well to make him drink now and again plain filtered water. The possibility of thirst seems rarely entertained. A dessertspoonful of some natural saline aperient water given at night aids the return of the natural consistence of the stools.

For intestinal catarrh, the starch of the food must be curtailed, means taken for ensuring fine division of the milk curd, and special attention given to completely encasing the child in warm clothing—flannel.

Of other measures, a Castile soap suppository and glycerine—both old-fashioned remedies—find favour with Dr. Eustace Smith; but for permanent cure, internal remedies are greatly to be preferred. *Nux vomica*, *belladonna*, *senna*, and *calumba* form one good prescription; the liquid extract of *cascara* and *belladonna* another; and, where the evacuations are very dry, sulphate of soda or some other saline aperient.

12. Cholera infantum.

Sven von Hofsten (*Archiv f. Kind.*, x. 1) gives a report upon 998 cases in the Hospital for Children at Stockholm from 1860 to 1882. The deaths were 734, or 73·5 per cent. As regards treatment, the author places before all tonic and stimulant measures—

ether, camphor, champagne, cognac, coffee, and strong tea. In bad cases, the subcutaneous injection of ether or a solution of camphor in oil (1 in 10) has given good results. The mustard-bath is also recommended; but wet packs tend to excite collapse. To combat the cause, bismuth, naphthalin, and calomel are recommended; and for the vomiting and griping, hydrate of chloral injections are advocated.

13. Adynamia.

Ferreira (*Revue Men. de Mal. de l'Enf.*, Aug., 1887) writes in favour of alcohol in the diseases of childhood. It should be of good quality, and given in small doses. The diseases specially mentioned are respiratory affections in general—acute pneumonia, broncho-pneumonia, capillary bronchitis, asthma, tuberculosis, and chronic phthisis. It is useful also in infantile cholera, rickets, and scrofula. It is contra-indicated in dyspepsia and hepatic derangements. Of somewhat similar purpose would *kefir* appear to be. Monti (*Algem. Wien. Med. Zeit.*, 1887, 22, 23.) It is made from boiled milk by adding the ferment *kefir*, and it seems to resemble the product which is more familiar in this country, under the name of koumiss, in the quantity of alcohol that it contains. It has proved useful in anæmia, wasting in any severe disease, chronic gastric and intestinal catarrh, catarrh of the air-passages, chronic pneumonia, diseases of the kidneys, and articular rheumatism. It is better to give a bottle once or twice a day than in larger quantities, and it should be given for some time, when it increases the appetite, and leads to gain in the body-weight. Nausea and vomiting are seldom noticed if the article is well prepared; but if *not*, there is a risk in its administration, and herein is the objection to its use, for there are no means of recognition of the mature from the immature product. Two more recent articles on the same subject have of late appeared in the *Archives of Pediatrics*—one by Dr. Longstreet Taylor (May, 1888), giving a very favourable opinion of it as an infant food in marasmus; the other by Dr. Brush (July, 1888), critical in its nature, and chiefly contesting the statements of Dr. Taylor. Dr. L. Taylor—discarding the disputable matter—makes the following important point—that foundlings do well on *kefir* as a food. His observations extended over a period of five months, and it was first used on a few apparently hopeless cases of atrophy. A small number refused to take it, nearly all required coaxing at first, but after a few meals came to like it; not a single case died. The author thinks, in opposition to Monti, who advocates one or two meals only in the day, that the greatest benefit is derived from its sole and continuous use for at

least six weeks. If the infant be less than a month old, it should be diluted one-third with water, and gradually given stronger, until at six weeks it be taken undiluted. In children over a year old crackers and toast may be given with it, and one meal a day may consist of farinaceous food. In young infants, young or weak kefir is best; for those older, the medium or even old kefir may be used. But in extolling kefir, Dr. Longstreet Taylor speaks in disparaging terms of koumiss. It is upon this that Dr. Brush fastens his criticism, and in that matter he certainly carries his reader with him. Whatever may be the nature of the "kefir grains," they evidently produce a change in milk which closely resembles, even if it be not identical with, the product known in this country as koumiss; and whereas very little is known about kefir, and no one makes it, koumiss is in the hands of a respectable firm,* and is made of as nearly known a composition as possible, and it is to this article that we must look in England if fermented milk is to prove of value as an infant's food.

14. Articular rheumatism.

Demme (*Jahrb. f. Kind.*, xxvii. 4) describes the effect of antipyrin and thallin in acute rheumatism. Antipyrin acts readily upon acute articular rheumatism, but not quite so promptly as salicylate of soda. The author recommends the antipyrin in cases where the temperature is high, and that it be followed by the salicylate. And he thinks that small daily doses of antipyrin for a long time prevent relapses.

Sixteen cases were treated by tartrate of thallin, but in very young children it was marked by colic, watery stools, and sometimes by albuminous urine and casts.

15. Chorea.

Legroux and Dupré (*Revue Mens. des Mal. de l'Enf.*, March, 1887) have given antipyrin in twenty cases, and they conclude that it is one of the most rapid, certain, and inoffensive agents for the treatment of this disease, whether before or after puberty. Diminution of the abnormal movements will usually begin in four to six days. The patients were soon able to sleep and eat in comfort, and the movements gradually disappeared. The dose was about 7 grains five or six times daily.

I have tried this remedy now in five or six cases, and have given 5-grain doses three times a day, and the results lead me to think that the drug may accomplish what is here stated.—J. F. G.

16. Eserine poisoning in chorea.

Lodderstadt (*Berl. klin. Wochens.*, 1888, 17). A little girl of

* The Aylesbury Dairy Company.

nine years, with intractable chorea of long standing, was admitted under Prof. Henoch for the purpose of trying the subcutaneous injection of sulphate of eserine. A quarter of an hour after the first injection of '0005 gramme the child became much agitated, vomited repeatedly, and had bad headache. A few minutes later abundant sweating and salivation came on, the pulse became small, thready, and slow, the pupils strongly contracted and sluggish. These phenomena lasted six hours without any modification of the choreic movements.

SUMMARY.

There is nothing additional to be supplied under this heading. So far as I have been able to ascertain, the year's progress has rather lain in good papers on descriptive medicine; that is to say, on points concerning the natural history of the various diseases than in their modifications and alleviation or cure by remedies. Some of these, but a by no means exhaustive list, are enumerated as follows:—

Townsend, Incontinence of Urine (*Arch. of Ped.*, Dec., 1887).
A good résumé of the subject.

Hirschberg on Chronic Exudative Peritonitis (*Arch. f. Kind.*, 1887, ix. 2; abst. *Arch. of Ped.*, May, 1888).

Steffen, Acute Myocarditis (*Jahrb. f. Kind.*, xxvii. 3).

Jacobi, Therapeutics of Diphtheria (*Phil. Med. News*, June 16, 1888; abst. in *Arch. of Ped.*, Aug., 1888).

Ehring, Salicylate of Bismuth in the Treatment of Diseases in Children (*Jahrb. f. Kind.*, xxvii. 4).

Simon, Treatment of Convulsions, Anæmic and other, in Children (*Gaz. Méd. de Paris*, March 3, 1888).

Gowers, Birth Palsies (*Lancet*, April 14 and 21, 1888).

Lovett, Cerebral Paralysis in Children (*Boston Med. and Surg. Journ.*, June 28, 1888, reprinted).

Baruch, A Clinical Study of the Etiology and Treatment of Summer Diarrhœa of Infants (*Medical News*, July 7, 1888).

Meigs, Dietetic Management of Summer Diarrhœa (*Medical News*, July 7, 1888).

Love, Dietetic Management of Summer Diarrhœa (*Weekly Medical Review*, Aug. 18, 1888).

Huchard, Treatment of Adynamic and other Conditions by the Hypodermic Injection of Caffeine (*Rev. Mens. des Mal. de l'Enf.*, June, 1888).

Comby on Some Forms of Infantile Stomatitis (*Rev. Mens. des Mal. de l'Enf.*, Sept. and Oct., 1888).

Saint-Philippe, Blistering in Infants (*Rev. Mens. des Mal. de l'Enf.*, Sept., 1888).

Fervers on the Treatment of Pertussis by Hypodermic Injections of Quinine (*Jahrb. f. Kind.*, xxviii. 2).

Louis Starr, Summer Diarrhœa of Infancy and Childhood (*Med. Standard of Chicago*, July, 1888).

W. H. Dickinson on the Differences between Children and Adults in regard to Morbid Action and the Effects of Treatment (*Lancet*, Nov. 3, 1888).

Lees, Two Cases of Hysteria in Boys (*Lancet*, vol. i., p. 1125, 1888).

CONTINUED FEVERS.

By SIDNEY PHILLIPS, M.D., M.R.C.P.,

*Assistant-Physician to the London Fever Hospital, and Physician to Out-Patients,
St. Mary's Hospital.*

1. Pyrodin a new antipyretic.

Dr. Dreschfeld (*Med. Chron.*, Nov., 1888) made clinical observations on the use of this new antipyretic, supplied to him by Dr. Liebmann, of Manchester. Pyrodin is a white, crystalline powder, but sparingly soluble in cold water; it possesses very little taste, and is therefore easily administered as the powder. Dr. Dreschfeld found that in doses of 8 to 12 grains, for several consecutive days, it produced no ill effects nor fall in the body temperature in *healthy* persons. He afterwards administered pyrodin in cases of croupous pneumonia, scarlet fever, typhus, typhoid, and in acute rheumatism. Dr. Dreschfeld's paper contains valuable details of the careful observations which he made in all these cases; and he sums up the results of his investigation as follows:—

- (1) Pyrodin is a powerful antipyretic.
- (2) It reduces the temperature quickly, and maintains the temperature at a low level for some hours.
- (3) It is easily taken, and produces marked perspiration, but no nausea, vomiting, or collapse.
- (4) It is especially applicable in cases of pneumonia, scarlet fever, and typhus; but less so in typhoid, owing to early exhibition of toxic symptoms.
- (5) It is found to act where other antipyretics have failed, and is more powerful in action than antipyrin or antifebrin or phenacetin; and its action lasts longer.
- (6) It reduces the pulse rate, as well as the temperature, and often causes diuresis.

The dose recommended by Dr. Dreschfeld is 8 to 12 grains for an adult, and 2 to 4 grains for children. One dose in twenty-four hours is usually sufficient.

Pyrodin produces in some cases, especially in typhoid fever, toxic symptoms, jaundice, hebetude, icteric urine and even albuminuria. These symptoms are similar, somewhat, to those producible by antipyrin and antifebrin; but they are more readily produced by pyrodin; and Dr. Dreschfeld gives a caution that it is not safe to give it in large doses, or to repeat the dose too often.

2. Salicylate of ammonium for fevers.

This is the title of an article by Dr. D. M. Wick, of Iowa, in the *Journal of the American Medical Association*. He gives notes of cases of measles and other fevers which were successfully treated by this drug, and attributes its effect to "germicide, antiseptic and antipyretic powers." Dr. Sauerhering (*Journal*, March 3, 1888) found in "an endemic" of typhoid, in which he had tried quinine, salicylic acid, and antipyrin, that "the remedy *par excellence* proved to be ammonium salicylate. It invariably reduced the temperature to 99° to 100°, keeping it there during the entire course of the disease, diminishing the rate and force of the pulse, and causing, in the majority of cases, profuse diaphoresis." When given early it would generally cut short an attack, the patient being able to be up and about in two or three days. Dr. Barnett, in the same journal (Oct. 6, 1888) confirms the observations of these two writers. The following is his formula:—Acid. salicyl., ʒij.; ammon. carb., ʒij.; aq. menth. pip., ʒiv. In this way ammonium salicylate is produced; and a teaspoonful of the mixture is given every two hours. It is well borne by the stomach, and sometimes acts as a laxative in cases of typhoid with constipation. In other cases, where the diarrhoea has been excessive, the number of the stools has been lessened and their character improved by the salicylate of ammonium. It is also claimed that the headache and tendency to sleeplessness are lessened and the quantity of urine augmented. The only disagreeable symptom produced by the salicylate is occasionally ringing sounds in the ears.

3. Acetphenitidine as an antipyretic.

This drug is a derivative of carbolic acid. It crystallises in colourless needles, is slightly soluble only in water, but in alcohol readily. Its antipyretic action was described by Kohler (*Wiener med. Wochens.*, No. 26, p. 27, 1887), and quoted in the "Year-Book" for 1888. Since then extensive trials have been given to it. Rumpf (*Berl. klin. Wochens.*, June 4, 1888, pp. 45 and 75) finds it an absolutely reliable antipyretic agent. In doses of 8 grains for adults, and half that quantity for children, the temperature constantly fell 3.6° to 5.4° F. F. Muller (*Thér. Monatsh.*, Aug., 1888) found the temperature in adults was lowered by doses of 7 to 11 grains, and as much as 15 grains

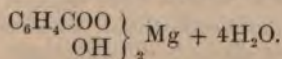
very rarely required to be used. The apyrexia lasted three to five hours, and the patients were quite comfortable, and had an improved appetite and more sleep. The subsequent rise of temperature was accompanied by no chill. Drs. Hunsberg and Kast (*Deutsch. med. Zeitung*) found the temperature to be reduced about 2° C. by a dose of 3 to 7.5 grains, falling gradually, and that it began to rise again in three or four hours. All these authors agree that no unpleasant symptoms attend or follow its action: there is no sweating, no rash nor renal irritation, nor any vomiting or diarrhoea; and Rumpf and F. Muller both regard it as preferable to antipyrin or antifebrin. The former observer, however, asserts that if the drug is administered continuously, the temperature rises again in spite of it, and after some days the system becomes habituated to it, and cyanosis may be produced; but this is only after giving doses of 90 to 120 grains. In one case recorded by another writer, where given for migraine to a female patient, 15 grains repeated in three hours caused vertigo, chilly feelings, and cyanosis, with sweatings.

4. Treatment of typhoid fever by salicylate of magnesium.

This method of treatment is commented upon in the *Pharmaceutische Post*, March 18, 1888, and quoted in the *Therap. Gazette*, June, 1888. According to Huchard, the decrease of mortality in cases of "ileo-typhus" under this treatment is so great, "that the most enthusiastic followers of Brand's water treatment have just cause to be envious." The action of the drug on the typhoid patient is seen in the disappearance of weakness, in the disappearance of the foul smell of the mouth, a decrease in the swelling of the abdomen, and a lessening of the decomposed odour of the feces. In cases where the drug had been used from the first, complications were but rarely observed. Even given in very large doses, no disagreeable effects whatever are produced; and, according to Huchard, it is much preferable to the salicylate of bismuth treatment which was recommended some years ago by Drs. Desplats and Vulpian, as its action is much less styptic than that of salicylate of bismuth.

M. Huchard's account is confirmed by the experience of Dr. P. S. Lant.

The formula of salicylate of magnesium is



It contains 74.6 per cent. of salicylic acid, and is acid in reaction and crystalline. It is prepared by dissolving salicylic acid in

water, and while the solution is heated to boiling point carbonate of magnesium is added until the solution becomes saturated, and the salt finally crystallises in long colourless needles, soluble in water or alcohol. The dose is 50 to 100 grains daily.

5. Treatment of typhoid by antiseptics.

Leroux (*Le Bulletin Méd.*, June, 1888) gives to all cases a good dose of calomel, and then, if there be diarrhœa, he gives naphthol and bismuth ââ gr. 4, every hour, in capsules or suspended in milk; if there be constipation, he gives naphthol and salicylate of magnesium ââ gr. 4.

Leroux finds this treatment aids in disinfecting the stools, diminishes meteorism, and possibly affects favourably the course of the disease. With reference to the general treatment of typhoid by antipyretics, F. Pasternazki (*Wratsch.*, No. 20, 1888) has analysed the results of 221 cases which occurred between 1879 and 1887, and who were treated variously, some without drugs but by baths, some by calomel, some by salicylate of soda, some by quinine, and some by the new antipyretics. He found that those treated by antipyretics showed the lowest mortality, only 6·8 per cent., but the disease lasted on an average twenty-seven days instead of averaging twenty; relapses also were more numerous.

6. Treatment of typhoid fever by strophanthus hispidus.

Dr. Poulet (*Bulletin Gén. de Thérap.*, 29th Feb., 1888) found in three cases of typhoid that strophanthus was a most certain antipyretic with a persistent effect. No depression is produced by it, and it counteracts the tendency to hæmorrhage from the intestine.

7. Treatment of scarlet fever by oxygen.

Dr. Astley Greswell (*Practitioner*, vol. xi. Nos. 4 and 5) records the progress of several patients treated in this way. The oxygen was inhaled in the gaseous state, or given in solution as oxygenated water.

Where inhaled it was obtained from Brin's Oxygen Company, Westminster, in cylinders of ten cubic feet capacity, and containing oxygen which had been forced into them under a pressure of 120 pounds. The oxygenated water is water charged under a pressure of twelve and a half atmospheres with the oxygen gas, and is kept in glass syphon bottles in an effervescing state.

Dr. Greswell's observations were made on 588 patients in one of the hospitals of the Metropolitan Asylums Board. The water appears to have been given freely, sometimes *ad libitum*, and the inhalations in quantities of one-quarter cubic foot every hour. Reviewing the results of the oxygen treatment, Dr. Greswell

writes: "It would appear that not a few advantages may be derived from its use. The water by itself is undoubtedly efficient in assuaging the febrile thirst, being taken greedily, and thereby subserving several purposes. It reduces nausea, increases the appetite, reduces, perhaps, the fever and delirium; further, it aids its metabolism; it certainly serves to maintain an active mechanical flushing of the renal tubules, and in the latter process it may aid in the transudation outwards and removal of noxious bodies, possibly of the scarlatinal virus itself. Ordinary drinking water will not serve the same purpose, because patients can be induced to take but little. Nor will lemonade, and this for two reasons. In the first place, patients do not take it as freely as oxygenated water; and further, it needs to be borne in mind that carbonic acid is formed to excess in the febrile body; and this acid is known to interfere with the capillary circulation; inhalation of it is said indeed to excite fatty degeneration of the cells of the convoluted tubes of the kidney, and to be a cause of albuminuria. Hence we may surely doubt whether febrile thirst should be assuaged with lemonade or other carbonated water. Upon the whole, oxygenated water would appear to be the most convenient effervescing and appetising water for exhibition to a person the subject of pyrexia. As regards the oxygen gas, it proved, I think, beneficial in many ways. Hopeless cases were revived by it, and existence was by it occasionally prolonged." In a case of uræmic coma, and in several cases of pulmonary complications, it served a useful end. "In badly-nourished convalescents the appetite and weight were quickly increased by it. In several moderately severe cases the gas with the water appeared to have a powerful influence for good, as also in three cases in which the prognosis was undoubtedly very grave. And the tendency to albuminuria was, I think, without question, diminished in cases in which the oxygen gas and oxygenated water were perseveringly administered."

8. Treatment of scarlet fever by carbolic acid.

Mr. A. Wigglesworth (*Lancet*, vii. 1887) gives details of the treatment by carbolic acid: of 300 cases thus treated no one died. He claims also that as a prophylactic it is almost a specific. The dose of the acid for a child of three to six years is three minims; for an adult, eight minims. It may be given in syrup of orange peel and water till the urine of the patient becomes smoky. It ought to be begun early to be effectual, but even may be useful when begun a few days after the appearance of the rash. Mr. Samuel Lee (*Lancet*, vii. 1887) confirms the useful effect of carbolic acid, and points out it was recommended by Dr. Keith in 1869.

9. Treatment of small-pox by essence of turpentine.

Dr. Jena, of Buenos Ayres (*Revue de Thérap.*, 1888, No. 11), treated successfully three patients affected by malignant or hæmorrhagic small-pox with essence of turpentine. He says that the drug prevents the hæmaturia, which is one of the first symptoms of hæmorrhagic small-pox and purpura. An illness of such short duration as malignant small-pox demands that treatment to be effective shall be immediate, and commenced immediately upon the diagnosis being made. In many fatal cases in which the turpentine was tried the symptoms were ameliorated and life was prolonged until the period of desquamation, but nearly all the patients died of hypostatic pneumonia.

In the cases which recovered the turpentine was gradually lessened till convalescence was established. Dr. Jena describes the rash as gradually drying up under the turpentine treatment, and exfoliating without leaving cicatrices. The formula which is recommended by Dr. Jena is—

Emulsion of gum...	...	30	drachms.
Essence of turpentine	...	1	$\frac{1}{2}$ drachms.
Syrup	...	1	$\frac{1}{2}$ drachms.
Essence of peppermint	...	1	drop.
A teaspoonful hourly.			

If there is hæmatemesis or gastric irritability ice is given, or an infusion of iced jaborandi.

10. Treatment of small-pox by camphorated iodoform with vaseline.

Dr. Colleville, of Reims (*Revue de Thérap.*, 1888, No. 1), finds a mixture of twenty parts of vaseline with one of powdered iodoform and two of powdered camphor an admirable disinfectant for application to small-pox pustules, the camphor lessening the odour of the iodoform.

11. Treatment of small-pox by acetanilid.

Dr. Haas (*Prager. Med. Woch.*, Jan. 4, 1888, and quoted in *Therap. Gaz.*, April, 1888) treated seven severe cases of small-pox by antifebrin. He gave 31 grains in each 24 hours in a solution administered hourly during the daytime. He found its systematic use highly beneficial, reducing the afternoon temperature, relieving all the accompanying symptoms of fever; acting as a nerve tonic it gives the patient sleep, and by reducing the height of the temperature it enables the organism better to withstand the long-continued fever.

12. Therapeutics of diphtheria.

Dr. Jacobi (*Philadel. Med. News*, June 16, 1888) recommends

chlorate of potassium or sodium as *preventive* remedies, being of much benefit in cases of pharyngitis, etc., during an epidemic of diphtheria; 15 grains for a child of a year old should be given in twenty-four hours; and not more than 90 grains to an adult. The author declares there is no known specific for diphtheria. In the local treatment of external diphtheritic surfaces he advises iodol or iodoform, in powder, or with vaseline, claiming better results than with bismuth, boric or salicylic acid. For membrane on the fauces, no violence should be used in their removal. Often nasal injections will wash them off; but if not, the surface should be brushed several times daily with tincture of iodine or a drop of concentrated carbolic acid. All powders are contra-indicated, except calomel; but even this may irritate. Steaming is required in cases of tracheo-bronchial diphtheria; but for tonsillar or laryngeal cases it is of no service, but may cause an extension of the disease by softening the previously healthy membrane. For medicating the steam the author advises oil of turpentine and carbolic acid—a tablespoonful of the former and a teaspoonful of the latter, poured into boiling water hourly. In cases of nasal diphtheria general sepsis is specially liable to occur; disinfectant injections must therefore be commenced early and continued hourly for several days; and he recommends solution of chloride of sodium ($\frac{2}{3}$ of 1 per cent.), saturated solutions of boric acid; or one part of bichloride of mercury, thirty-five of chloride of sodium, and five thousand of lime-water; or carbolic acid 1 per cent. solution may be used. The injections should be made hourly, with a glass syringe with a soft rubber mounting; or by a Davidson's atomiser. The fluid injected should return by the other nostril. If the nose is too much blocked up by membrane, it should be cleared out by a probe wrapped in cotton wool and dipped in carbolic acid.

Over enlarged glands, Jacobi recommends the application of an ointment of iodide of potassium and lanolin. He also urges the internal administration of perchloride of iron in hourly or half-hourly doses, not only for its general effects, but for its astringent and antiseptic action on the diseased surface. He gives his approval to the treatment by internal use of bichloride of mercury as well as its topical application. Cardiac stimulants must be given early; several grains of digitalis may be required daily, with or without the sulphate of sparteine. For paralysis after diphtheria, digitalis and strychnine are recommended.

13. Treatment of diphtheria by peroxide of hydrogen.

Dr. Hatfield (*Arch. of Ped.*) revives the treatment of diphtheria

by aqueous solutions of hydrogen peroxide. The gas is not conveniently prepared or used by the bedside; but the solution is a clear, colourless fluid of little taste; and, without being caustic or escharotic in action, it is a most efficient antiseptic. Dr. Hatfield treated eighteen cases, occurring within a few weeks, with success by the hydrogen peroxide.

This treatment was recommended in 1886 by Hofmokl, of Vienna; and an abstract of his paper, from the *Viener Med. Presse*, was given in the "Year-Book" for 1887.

14. Treatment of diphtheria by hyposulphite of soda.

Dr. Fruitnight, of New York (*Archiv. of Ped.*, Oct., 1888), has treated about thirty cases of diphtheria by this remedy in the strength of $\frac{3}{4}$ i. to $\frac{3}{4}$ ii. of water, of which solution the dose was $\frac{3}{4}$ i. for children under twelve months old; to older children solutions up to twelve times this strength were given. Locally the solution was used in a spray atomiser, and in some was applied by a brush; and in nasal cases a syringe was used. The group of remedies, of which the hyposulphite is one, act both locally and constitutionally as germicides, but it is to its topical action that Dr. Fruitnight especially calls attention; of his thirty cases, two died.

15. Treatment of diphtheria by injection of perchloride of iron into the nostrils.

The method of Guelpa (*Arch. de Patol. Inf.*, May, 1888) is to inject perchloride of iron into one of the nares by a pocket syringe and let it escape by the other nostril. In this way the nares and fauces are irrigated, and if no false membrane has previously existed, it will be prevented from forming, or small portions already existing will be destroyed. He uses 5 to 10 per cent. solutions of the perchloride, injected in severe cases every quarter of an hour during the day, and every half hour at night. The treatment is described as "easy for the patient and easy for his physician and friends"!

16. Treatment of diphtheria by antiseptic fumigations.

Dr. Paterne (*Bull. Gen. de Thérap.*, 15th Oct., 1888) believes that the best mode of treating diphtheria is by vapourising antiseptic substances. He places an antiseptic solution close by the bed of the patient (the whole being surrounded by curtains), in a tray heated by a stove; these fumigations present three advantages over other methods of treatment: ease of introduction, sureness, and rapidity of absorption. If the medicament is introduced by mouth, to be absorbed by the alimentary mucous

membrane, it is liable to be altered by the digestive juices, whereas administered as a "vapourising" it is readily absorbed by the respiratory mucous membrane. The rapidity of absorption, too, is, Dr. Paterné points out, much greater by the respiratory mucous membrane than by the alimentary canal. One advantage of the method of moist inhalations is that the warmth and moisture themselves are important aids in treatment, while the antiseptic substances used in the inhalations are of use locally and by their absorption into the general system. Dr. Paterné recommends for vapourising, a solution of carbolic and salicylic acids in alcohol, and quotes very favourable reports from various physicians.

17. Treatment of diphtheria by pilocarpine.

Dr. Valderrama (*Deutsche Med. Zeitung*, No. 50, 1888) reports very favourably on the treatment which was described in the last "Year Book of Treatment." He finds that by the salivating effect of the drug the inflammatory affections of the mouth, pharynx, tonsils, and salivary glands are relieved, and that the profuse secretion softens the membranous deposit and prevents its union with the mucous membrane. The patient must have good food and stimulants with the pilocarpine. Dr. Jacobi (*Archives of Ped.*) regards the pilocarpine treatment as dangerous.

18. Treatment of diphtheria by chloral.

Dr. Adolphe Mercier (*Revue de Thérap.*, Feb. 15, 1888) administers the chloral in the form of a 20 per cent. solution of a syrup of the hydrate. When the tongue is thickly coated, and the febrile condition marked, he commences the treatment by an emetic, and ipecacuanha is the best. After nausea and vomiting have ceased, $1\frac{1}{2}$ to 5 grains of chloral, according to the age of the patient, and given *every half-hour*, and the doses should be given after and not before other drinks, so that the throat shall become saturated by the drugs; if no fluid is taken before the chloral, pain is set up in the stomach. In children especially it is necessary to press the treatment, and they often fall into a drowsy condition from the chloral. Dr. Mercier also applies externally belladonna ointment to diminish the swelling in the neck, and allows the patient to eat and drink as freely as he wishes; after twenty-four hours no change is detectable in the condition of the invalid, but in forty-eight hours the false membranes have completely disappeared. As soon as the membrane has separated the chloral begins to give pain on swallowing it, and its administration should be stopped, and the patient fed freely with quinine and tonics. Dr. Mercier avows the treatment is useless when the larynx is involved.

19. Treatment of diphtheria by menthol.

Cholewa (*Thér. Monatshefte*, 1888, ii. 284) reports most favourable results from the application of plugs of cotton wet with a 20 per cent. oily solution of menthol to the nose in cases of nasal diphtheria. In cases in which syringing the nose had been impossible, on account of its being entirely filled with membrane, this method seemed rapidly to remove the membrane, and to bring the diphtheritic process to a standstill (quoted from *Intern. Jour. of Med. Sciences*, Oct., 1888).

20. Treatment of diphtheria by mercury and ice and quinine.

Schmødler (*Rev. Mem. des Mal. de l'Enf.*, June, 1888) believing that the local manifestations precede the general infection, writes that it is important to act locally upon the disease by mild non-irritating antiseptics, and to treat the neighbouring lymphatic glands with ice and mercurial ointment, and to combat the general infection with quinine, etc. To the diseased surface the author applies a 1 per cent. solution of carbolic acid, or oil of turpentine, the latter by preference, being non-irritating and non-caustic. The applications should be made with great care every three hours. The neck should be surrounded with an ice-bag, and mercurial ointment should be rubbed into the enlarged glands. Internally calomel should be given at the commencement of the disease, both for its laxative and its antiparasitic effect: sulphate of quinine should be given in sufficient doses; chlorate of potash in small doses and a sufficient quantity of benzoate of soda combined with sulphuric ether. If not practicable to use oil of turpentine locally, it may be given internally in 5-drop doses with water or wine three or four times in twenty-four hours. We think this very vigorous treatment with so varied an assortment of drugs will scarcely commend itself to physicians generally.

21. Treatment of diphtheria by scraping off the membrane.

Dr. Gaucher, Société Médicale des Hôpitaux (*Revue de Thérap.*, No. 6, 1888, p. 151), believing that the local deposit of membrane is the source of the general infection in diphtheria, insists that the proper method of treatment is to forcibly scrape away all particles of membrane, and then to apply some caustic. To scrape away the membrane, he vigorously rubs it off with a plug of wadding rolled around a stick; it is first dipped in the caustic solution of camphor of carbolic acid. In the intervals frequent irrigations of the throat are made with carbolic acid.

22. Treatment of diphtheria by turpentine.

Dr. M. C. Roese (*Thér. Monats.*, January, 1888) analysed

sixty cases in which this treatment was resorted to. The mortality was 50 per cent. Thrice daily he administered oil of turpentine with spirits of ether, but at the same time he gave salicylate of soda internally of a strength of 2 per cent. It was found that the fever rapidly diminished, as well as the rapidity of the pulse; while the headache and the pharyngeal soreness became alleviated.

23. Treatment of diphtheria by borax.

M. Noël (*Revue de Thérap.*, No. 17, p. 463) treated all his patients during an epidemic with borax and nothing else. The dose for an adult is 45 to 75 grains, for a child under one year 7 grains. M. Noël has administered as much as 325 grains in twenty-four hours, but no greater effects were observable than with 60 or 70. The borax should be given in hourly doses. It is said to rapidly excite copious salivary flow, and in being eliminated by the muciparous glands of the throat and the salivary glands, it softens, dissolves, and removes the false membranes. The author condemns any other local interference, such as caustics, cautery, and insufflation of powders.

24. Treatment of diphtheria by salicylates and chlorate of potassium.

Dr. Lichtermann contributes an article to *Med. Oboz.* (No. 24, 1887) describing his treatment. This commences by a foot-bath of fifteen minutes' duration, of mustard and water. After this the child is removed into a room already disinfected by chlorine gas, and there the pharynx is mopped out four times a day by a solution of salicylate of soda in glycerine (1 part of the first to two of glycerine), and made to gargle every half-hour with a solution of chlorate of potash (1 in 30). Internally the child is given a solution of chlorate of potash, and this is after each dose quickly followed by a dose of a solution of hydrochloric acid. The theory of the author is that under this treatment (1) the sweating and the chlorate of potash contribute to make the blood thicker, and consequently richer in salts—unfavourable conditions for the development of the diphtheritic microbe. (2) The rapidly succeeding internal administration of chlorate of potash and hydrochloric acid is supposed to develop free acids of chlorine, which in their nascent state are "microbicides" and oxidisers. This treatment, whatever the truth of the theory, seems, like many others suggested, to be unpractical. Young children will not gargle, and in few cases can rousing the child for half-hourly medications be practised with advantage.

25. Apomorphine in the treatment of diphtheria.

Munoz (*El Prog. Ginecol.*, July 10, 1887; and *Archives of Pedr.*,

Jan., 1888) writes that the state of asphyxia from false membrane in the larynx often prevents the action of emetics. In such cases apomorphine is very effective, its emetic action not being interfered with whatever the degree of laryngeal obstruction. The drug may be dissolved in cold, or better in hot, water. It should be prepared fresh on each occasion and administered hypodermically.

26. Treatment of diphtheria by corrosive sublimate or calomel.

Stumpf (*Rev. Mens. des Mal. de l'Enf.*, March, 1888, and reported in *Archives of Pedr.*, Sept., 1888) sprays the pharynx with a solution of bichloride of mercury by a Richardson's atomiser every three hours. He found in many cases that the development of the false membrane was arrested, and difficulties of deglutition became diminished. In three to five days the membrane could readily be detached; in no case were there signs of mercurialism, except in one, in whom there was free salivation for three or four days. Corbin (*New York Med. Journ.*, March 10, 1888) believes that the only way to introduce sufficient mercury into the system is by volatilising the drug. The child is put in bed under a canopy, and by means of a lamp calomel is volatilised. One drachm should be volatilised in one minute, and in the case of a child of eight or ten years, from 40 to 60 grains are volatilised every two or three hours during the first day. After this less frequent volatilisations are used. In some cases they have been continued for a week. Of sixteen cases thus treated, thirteen recovered.

27. Treatment of diphtheria by sulphur internally.

Knaggs (*Therap. Gaz.*, March, 1888) advocates the internal use of small doses of sulphur suspended in a viscid mixture. This method answers as well as insufflation of sulphur powders, and with less distress to the patient. His formula is—

Precipitated sulphur, ʒiiss; chocolate powder, ʒi; cinnamon water (1 in 40), ʒj; glycerin to make ʒiii; half to one teaspoonful, to be taken every hour, slowly swallowed or sipped.

28. The feeding in diphtheria.

Mr. Guelpa (*Revue de Thérap.*, June 15, 1888, p. 327) believing that complications are sometimes set up by solid food, thinks that diphtheritic patients should be nourished by liquid foods, especially milk, and that the passage of solid food may lead to the recrudescence of a diphtheria that appeared to be cured.

M. Cadet de Gassecourt, on the contrary, does not agree in the opinion that the relapses in diphtheria are set up by solid food, but that they are rather a part of the history of the disease. He thinks, however, that when there is much fever it contra-indicates a too abundant feeding.

GENERAL SURGERY.

By FREDERICK TREVES, F.R.C.S.,

Surgeon to, and Lecturer on Anatomy at, the London Hospital.

1. The treatment of wounds.

Dr. Rydygier (*Beilage zum Centralbl. für Chirurgie*, 1888, No. xxiv.) advises that no drainage-tubes should be used for wounds likely to heal by first intention.

All wounds should be most carefully cleansed. This should not be effected by rough and frequent sponging, but by arresting all bleeding, removing all diseased tissue, and then well washing the surface with an antiseptic solution. The antiseptic solution used for this purpose should be weak.

Much damage is done by the rough sponging of wound-surfaces and the use of strong antiseptic lotions.

No clot must be allowed to remain in the hollow of a wound. The union of the wound by suture should be light. There should be no traction upon the skin.

Compression should always be employed, so as to press together the deep surfaces of the wound, and thus obliterate the wound cavity.

The best dressing is iodoform gauze dipped in a solution of corrosive sublimate.

2. A new antiseptic dressing.

Mr. Hewetson (*Lancet*, June 23, 1888) uses China grass. It is a soft, silky, and very highly absorbent fibre. The combings form an elastic silken wool, which, when treated with 4 per cent. of salicylic acid, provides an excellent surgical dressing. The value of the material has been proved by an extended trial. It keeps the wound dry. When applied under the pressure of bandages the material still retains its absorbent qualities, and does not cake when properly teased out before use.

3. Creolin as a dressing for wounds.

Prof. Esmarch (*Centralbl. f. Bacteriologie*, 1887, Bd. ii. p. 295)

states that creolin is non-poisonous when administered to animals in large doses. It has a potent destructive effect upon bacteria, even when used in weak solutions. In this direction it is more efficacious than a solution of carbolic acid of like strength. Carbolic acid, however, is more active against the anthrax bacillus.

Creolin arrests decomposition, but not so well as carbolic acid does. It is, however, a most potent deodoriser.

It is stated to be of somewhat uncertain composition, and has an objectionable smell.

Dr. Kortum (*Bemerkungen über die ärztliche Anwendung des Creolin*, Hamburg, 1888) speaks very highly of creolin as an antiseptic. A 2 per cent. watery solution should be used to wash the surgeon's hands and the skin of the part to be operated upon; also to keep instruments in, and to cleanse foul wounds.

A $\frac{1}{2}$ per cent. solution is employed for washing operation wounds, for washing out the vagina, and as a gargle in diphtheria.

A solution of 1 in 1,000 is excellent as an injection in gonorrhœa, and as an antiseptic lotion for washing out the bladder.

A 2 per cent. solution can be used in the form of an ointment, an oil, and a powder.

A 5 per cent. solution in oil has a potent effect upon animal parasites, and has been used with good results in itch and to destroy lice.

Creolin is very soluble, is non-poisonous, is non-corrosive, and is cheap. It does not damage instruments.

Two objections are urged against it. The smell is objectionable, and the solution is opaque, and is, for the latter reason, not adapted for keeping instruments in during an operation.

4. Trichloride of iodine as a dressing for wounds.

Dr. Langenbuch (*Berliner klin. Wochenschr.*, 1887, No. 40). This substance (ICl_3) takes the form of an orange-yellow powder. It is very volatile, and is sold in sealed tubes. It has a very pungent odour.

It is soluble in water, and forms a mahogany-coloured fluid. This solution contains free iodine and chlorine, and must be kept from the light. It is especially apt to break up into its component elements when brought in contact with organic matters. It is a powerful antiseptic, and is non-poisonous.

For surgical purposes—to wash the hands, to cleanse sponges, to protect instruments, and to wash an operation wound—it is used in the form of a solution of from 1 to 1,000 to 1 to 1,500.

It acts somewhat injuriously upon instruments. As a dressing it is applied on gauze. The author speaks very highly of its surgical value.

5. Infusorial earth as a powder for dressing wounds.

Dr. Habart (*Wiener med. Presse*, 1888, No. 9). Infusorial earth is met with either in the form of a fine, soft, white powder like flour, or as a firmer and friable substance of a grey-white colour like chalk.

The earth is prepared simply by heating it to a red heat. It may be used pure or in combination with some antiseptic substance. It is very absorbent, and can take up from five to seven times its weight of water. It combines with antiseptics readily, and retains them well. The best antiseptics to combine with the earth are salol, salicylic acid, or iodoform. The compound powder, so prepared, is applied to the wound in the same manner as are the various other powders used as dressings for wounds. Of its value in surgical practice the author speaks in terms of high praise.

6. Peroxide of hydrogen in surgery.

Dr. Love (*Philadelphia Med. Times*, 1888, March 15) claims that peroxide of hydrogen is an admirable antiseptic. It cleans unhealthy wounds and foul ulcers, and exercises a most beneficial effect upon old sinuses and fistulæ. It also is stated to be an excellent application in cases of diphtheria, and to be a powerful destroyer of parasites. It is recommended as a means of treating chancre.

The ordinary peroxide of hydrogen of commerce—as used for bleaching purposes—is employed in the form of a 3 per cent. watery solution.

The solution has the disadvantage of readily undergoing decomposition.

There is nothing in Dr. Love's communication to show why this drug is to be preferred to the many excellent antiseptics now in use in surgery.

7. The hardening of indiarubber drainage-tubes.

Dr. Javaro (*Centralbl. f. Chir.*, 1888, No. 33, p. 601) points out that indiarubber drainage-tubes become softened after long immersion in antiseptic solutions. When so changed they are really compressed when in use, and may be so bent upon themselves, or so held, as to have their lumina occluded. He hardens his tubes by the following method:—The tube—and especially the orange-coloured kind—is dipped for five minutes in concentrated sulphuric acid. The tube is changed to a dark chestnut colour, and at once becomes hard. It is then washed in a 75 per cent. solution of alcohol, and is finally kept in a 5 per cent. carbolic acid solution, or in weak corrosive sublimate lotion.

These tubes are always firm and resisting, are not injured by carbolic acid, and will keep open even when introduced through an intercostal space.

S. The treatment of erysipelas.

Not a year passes but numerous contributions are made to the literature of the treatment of erysipelas.

In bringing forward a new measure of treatment, each author usually deplors the want of success which has attended previous methods, and expresses satisfaction that his own special process has been attended with great good.

Erysipelas is a disease with a great disposition to undergo spontaneous cure in a comparatively short period of time. Under such circumstances the expectant treatment may claim advantage. In the graver cases it has not yet been shown that any of the much-vaunted perfect methods of treating the disease have had notable effect upon its progress.

Dr. Wolfier (*Separat-Abdruck aus den Mittheilungen des Vereins der Ärzte, Gras., 1888*) commences his paper by stating that the treatment of erysipelas has not advanced much of late, and that certain much-advocated measures have not proved so valuable as was anticipated.

He advocates the mechanical treatment of the disease, and claims that this method is superior to all others. The method is the following:—A strip of adhesive plaster, about the width of the thumb, is bound firmly to the sound skin, just beyond the spreading margin of the erysipelas. In the case of the limbs the strip of plaster would, of course, entirely encircle the extremity. This suspiciously simple remedy was employed in twenty-four instances. In nineteen of these the spreading of the erysipelas was arrested at once by the barrier of plaster. In three cases the redness crossed the first barrier, but was stopped by the second. In the remaining two cases the erysipelas crossed also the second barrier, but was arrested by a third. In the nineteen cases the fever lasted from three to seven days. In the five cases the duration was eight days.

Dr. Madelung (*Beilage zu No. 107, Korresp. des allgem., Mecklenburg Ärzte-Vereins*) has also tried many methods, but gives his whole support to a plan of treatment originally recommended by Riedel. It consists of multiple scarification of the skin of the affected part, the area so treated being afterwards dressed with strips of gauze dipped in carbolic lotion. It is maintained that the fever at once abates, and that a very excellent result follows. It is noted, however, that in some cases *the scarification may have to be repeated.*

9. The treatment of tetanus.

Mr. Butlin (*Brit. Med. Journ.*, 14th Jan., 1888, p. 74) reports the following case on behalf of Mr. Prior, of Norfolk.

The subject of tetanus was a man aged twenty-six, and the symptoms appeared fifteen days after a severe cut of the arm with glass. He became rapidly worse, and on the eighth day of the tetanus appeared to be dying. The treatment up to that time had consisted in the administration of chloral and bromide of potassium. A draught was now given every two hours, consisting of 20 grains of salicin with 20 grains of bromide of potassium. A marked improvement at once followed, attended by profuse sweating. The improvement was maintained, and in six weeks the patient was convalescent.

10. The treatment of indolent ulcers.

Dr. Späth (*Centralbl. f. Chirurg.*, No. 14, 1888) gives an account of Dr. Harbordt's method of treating chronic torpid ulcers. The value of the measure advised is based upon the experience of seven years. He considered that the disposition not to heal depends upon the ill-nourished condition of the parts, the scanty blood supply, and the consequent obstruction in the way of granulation formation. The author does not speak in favour either of excision of the callous margin of the ulcer, or of the transplantation of large flaps of skin.

The treatment is as follows:—The whole ulcer is bisected by an incision carried from one end to the other and continued on either side into the healthy tissues. The cut involves not only the skin but also the fascia beneath. Several transverse incisions are made in like manner at regular intervals on either side of the main wound. The incisions so made gape widely. Bleeding is checked by pressure. As soon as all hæmorrhage has ceased, the part is dressed with iodoform and covered up.

The dressing is not disturbed for from eight to fourteen days. At the end of that time it will be found that granulations are springing up from the cleft made in the ulcer, and these soon spread over the surface of the sore and reach the cutaneous margin. When the ulcer presents an even granulating surface, skin-grafting may be employed. The treatment cannot be carried out until the ulcer has been well cleaned and until it is free from sloughs and from putrid discharge.

The paper is illustrated by a series of cases. The method advised is not entirely original, but does not appear to have been tried under the modern conditions of wound treatment.

11. The treatment of carbuncle by scraping.

Mr. Herbert Page (*Brit. Med. Journ.*, 24th March, 1888) writes as follows of the treatment of common carbuncles.

The actual methods of treatment, whether by incision, by potassa fusa, by pressure, or by poulticing, have this in common, that the tissue which has been destroyed by the violent inflammation is left to be got rid of in Nature's own way, by cessation of the gangrenous process, by the formation of granulation tissue, and by the gradual detachment of the sloughs. During this slow and tedious process the patient is subjected to many risks, and has much to contend against, the worst of them being exhaustion and pain, septicæmia, and pyæmia, and it is from one or other of these last conditions that death commonly ensues.

The mode of treatment is simplicity itself. The patient is anæsthetised, and if the slough has not already begun to boil through openings in the skin, a small central incision or incisions are made into the parts beneath, and then with the spoon you scrape out every particle of sloughing tissue, working down into the depths, going from part to part, controlling by gentle pressure any venous oozing there may be, while you are scraping there, until the whole slough is cleared out. Such skin as seems to be dead, blue and bloodless, you may cut away with knife or scissors, although it is marvellous how much of apparently worthless skin will return to life, and had better be preserved. Then having well irrigated the large open wound with perchloride or carbolic lotion, you dust iodoform over it, bandage upon it, with some pressure, wood-wool pads, and the procedure, which has not taken many minutes, is at an end. The author gives a series of three illustrative cases, in all of which the treatment was most satisfactory and successful.

Mr. Edmund Owen (*ibid.*) reports a case of carbuncle in a man aged fifty-five treated by this measure. The patient made a speedy recovery.

Mr. Rushton Parker (*Brit. Med. Journ.*, March 31, 1888) states that if the carbuncle be small enough, and seen early enough, an abortive treatment may sometimes be practicable by syringing through it an effective antiseptic liquid (strong carbolic or sublimate solution). This measure acts more efficaciously in cases of boils. It has the disadvantage of being very painful.

In fully developed carbuncles the author recommends the treatment by scraping or by excision. The latter method is best suited to the smaller and less mature carbuncles.

In some cases the two methods may be combined.

Sir Peter Eade (*Brit. Med. Jour.*, 19th May, 1888) endorses in a general way the opinions expressed by the three preceding writers. He thinks, however, that at the very earliest stage, when the trouble exists as a mere pimple, the carbuncle or boil may be almost

certainly destroyed by continuous soaking with a solution of boracic acid, salicylic acid, or other mild antiseptic. At a later period it may usually be aborted by inserting freely into its central or cribriform openings some strong solution of carbolic in water or glycerine. When it has become large and solid, and much surrounding tissue has been infiltrated, there is no surgical treatment other than that by scraping or excision.

12. The treatment of boils and carbuncles by carbolic spray.

M. Verneuil (*Bull. de l'Acad. de Méd.*, 1888, No. 3-7) recommends strongly the following original mode of treatment for boils and carbuncles :—

The part is simply treated with carbolic spray. The spray is derived from a steam inhalation apparatus. The instrument is placed at a distance of one-fourth to one-half of a metre from the skin of the affected district. The spray is allowed to play upon the boil for two hours daily, in from three to four sittings. In the intervals between the use of the spray the inflamed part is dressed with carbolic lotion. It is stated that this simple measure can be employed at any stage of the affection, that it allays pain, renders all operations unnecessary, and of itself effects a cure.

It would appear that the measure is little more than a reversion to the expectant treatment of boils, the parts being kept clean with carbolic acid.

13. Fixed bandages in place of plaster of Paris.

Dr. Aufrecht (*Deut. med. Woch.*, 1888, No. 9) advises a dressing of gauze bandage and strips of sheet iron in the place of the usual plaster of Paris bandage. The strips of iron are very thin, are 5 c.m. wide, and are of the length required for the part to be fixed. The strips are placed about the limb, and are kept in place by wet gauze bandages very liberally applied. A bandage is interposed between the strips of iron and the skin. The author has made extensive use of this dressing for inflamed joints, and for some fractures, *e.g.* fractures of the fore-arm. He claims that the materials are simple and portable, that the bandage is readily and rapidly applied, and that it fixes the part at once.

It deserves notice at the hands of military surgeons.

Dr. Waltuch (*Wiener klin. Woch.*, 1888, No. 10) used prepared shavings of pine wood. The shavings are so planed off from measured planks as to be about 4 to 5 c.m. wide, and 0.5 to 1 mm. thick, and of variable length. These shavings can be rolled up like bandages. They are applied with carpenter's glue, and require to be moulded to a firm mould already made of the part.

They form a firm, light, and well-fitting immovable dressing, well adapted for limbs, for cravats, and for spinal corsets.

14. The treatment of fractures into joints.

Dr. Oberst (*Samm. klin. Vort.*, No. 311), after pointing out the frequency with which ankylosis follows upon fractures into joints, advises the following measures as the best adapted to avoid that complication. The effusion into the joint should be at once removed by puncture, and return of such effusion prevented by the immediate application of a Martin's elastic bandage. The fragments must be adjusted with great accuracy. Passive movement must be practised during the period of repair.

These observations apply mainly to fractures of the elbow and wrist. Passive movement is commenced within a few days of the accident, and is applied at intervals, the splints being carefully adjusted after each exercise of the limb. The author claims excellent results for this method. The plan recommended might be adapted for such a joint as the wrist, but it could scarcely be proposed as a sound method for such an articulation as the knee. It is difficult, moreover, to allow an accurate adjustment of fragments to coincide with the early use of passive movement. The author appears to use plaster of Paris extensively, and to have this rigid dressing removed on every occasion when it is necessary that passive movement should be carried out.

Dr. Lauenstein (*Beilage zum Centralbl. f. Chirurg.*, 1888, No. 24), dealing with fractures involving the elbow-joint, is opposed to the use of the usual rectangular splint. He maintains that the callus thrown out when the limb is in this position tends rather to fix the joint and to encourage ankylosis. Lauenstein treats all cases of fracture of the lower end of the humerus, including the T-shaped fracture into the joint, in the extended position, employing a straight splint. He urges that in this posture the displacement can be more readily corrected, and the fragments more easily maintained in position.

The extended position is not maintained for long, and as soon as the parts are well fixed in their normal place, the limb is flexed and healing allowed to be completed in that posture.

15. The treatment of neglected dislocation of the humerus.

Mr. Marmaduke Sheild (*Med. Chir. Trans.*, vol. lxxi. p. 173) describes the case of a man, aged forty-eight, who was suffering from an unreduced subcoracoid dislocation of the shoulder. The accident had occurred eleven weeks before the patient came under Mr. Sheild's care. The deltoid was wasted, as were also the *flexor* muscles of the ulnar side of the fore-arm. All the signs of

ulnar nerve paralysis were marked. The median nerve was also implicated, but not to so marked a degree. Attempts to reduce the dislocation by means of extension failed; the head of the humerus was excised; the saw traversed the anatomical neck.

Twelve weeks after the operation the symptoms of nerve paralysis had nearly entirely disappeared, and the patient had so far regained the use of the limb that he had returned to his employment—that of a waiter at a large hotel.

Mr. Sheild concludes his paper with the following observations:—

“The operations designed and performed for the relief of old dislocations would seem to fall under the following headings:

1. Cutting down upon the bone and dividing those structures, muscular or ligamentous, which prevent the return of the head of the bone to its normal position.

2. Subcutaneous division of resistant structures.

3. Subcutaneous division of the bone through the surgical neck.

4. Excision of the head of the bone.

Fracture may almost be placed out of consideration as a deliberate method to be advised and practised.

As regards the first of these methods, though doubtless it would be possible to restore the head of the bone to position by a sufficiently free use of the knife, the operation would be an extensive one, not devoid of risk; and should it succeed in design, it is questionable whether the displacement would not return, or a useful limb result. So far as subcutaneous division of resistant structures is concerned, many of the same objections apply. In these cases, from various causes, the anatomical structures in the axilla may be altered in position, and, indeed, may be incorporated by inflammation with the very structures that need division.

Should firm bony ankylosis have ensued, the operation of subcutaneous section of the bone devised by Adams may prove advantageous.

The operation of excision of the head of the bone would thus be reserved for those cases of old dislocation where moderate efforts at reduction failed in accomplishing their object, and symptoms of pressure on the nerve trunks and main vessels were present, or where great fixity and loss of movement existed.”

16. The treatment of carotid hæmorrhage.

Mr. Frederick Treves (*Lancet*, Jan. 21, 1888) points out that in the permanent closure of a main artery for hæmorrhage from one of its branches, more is often done surgically than the needs of the case demand.

For the arrest of bleeding in many instances only a temporary occlusion of the vessel is needed, as shown by cases where severe bleeding has ceased after continued pressure upon the main trunk. The ligature of the common carotid for hæmorrhage is an operation not devoid of risk, and the author has in several cases simply exposed the main trunk, and has passed a long ligature around it, which ligature is allowed to hang out of the wound as a large loose loop. The catgut employed does not constrict the vessel in any way; but by dragging upon the loop the artery is occluded at once by bending, and so long as the traction is maintained no blood can pass along the vessel.

Several examples of this procedure are given. In one case severe bleeding took place from an accidental wound of the neck about the hyoid bone. It was impossible to ascertain from which branch of the external carotid the hæmorrhage came. The wound was deep and irregular, and the patient's state was such that any search for the bleeding point would have been most dangerous. The blood was pouring out in a profuse stream, that could only be checked by direct pressure. This pressure was maintained, while the common carotid was exposed by a lower incision and a loop passed round it. Traction upon the loop stopped all bleeding. This traction was maintained for some hours. When it was relaxed no hæmorrhage recurred, and the loop after lying *in situ* for about a week was removed. The patient made a perfect recovery. Other cases concerned the temporary securing of the artery during the removal of a deeply-seated tumour of the neck, and a case where the carotid of one side had already been tied for bleeding from the petrous bone. The bleeding recurred—it came from the internal carotid—but was controlled by traction upon a loop passed around the main vessel of the opposite side.

17. The treatment of wounds of the femoral artery and vein.

Mr. Walsham (*Med. Chir. Trans.*, vol. lxxi. p. 205) describes the case of a medical student, aged nineteen, who received a punctured wound in the upper third of the left thigh, at the apex of Scarpa's triangle, when suddenly opening a drawer of scalpels. Much blood was lost, and further hæmorrhage was arrested by a graduated compress. A traumatic varicose aneurysm formed. On the fourth day the femoral artery and vein were exposed and ligatured, both vessels having been wounded. A ligature of kangaroo-tail tendon was placed above and below the wound in the artery, and the vessel divided between the two ligatures.

The limb was enveloped in cotton wool, and kept raised. *The patient made a good recovery.* Mr. Walsham proceeds to

discuss the treatment to be adopted when both femoral artery and vein have been simultaneously wounded. He considers the subject under the following heads:—

- (1) Immediate simultaneous ligature of artery and vein.
- (2) Continuous pressure without operation.
- (3) Temporary pressure in order to allow the collateral circulation to become established before resorting to ligature.
- (4) Ligature of the artery and application of pressure to the vein.
- (5) Lateral *versus* circular ligature of veins.

A full list of reported cases of wounds of the femoral artery and vein are given.

In six cases (all of gunshot wound) in which what may be called an expectant treatment was carried out, all the patients died. Out of twelve cases treated by the immediate ligature of both artery and vein, seven recovered and five died. In twenty cases in which pressure was at first applied, and then both vessels ligatured after an interval, nine recovered and eleven died. Sixteen cases were treated by continued pressure, an arterio-venous aneurysm forming in each instance. Of these, eight recovered and eight died. In sixteen cases of lateral ligature of large veins for wound, thirteen were successful and three unsuccessful. Mr. Walsham deduces the following conclusions:—

(1) The safer course is to apply pressure for a few days, to allow the collateral circulation to become established, and then to cut down and tie the proximal and distal extremities of both artery and vein.

(2) Immediate ligature of both vessels, especially of the common femoral, is liable to be attended with gangrene, although the risk is probably less than has been assumed.

(3) If the wound is a mere puncture, ligature of the artery and pressure on the vein is a safe treatment, provided that the external wound unites by first intention.

(4) When the wound in the vein is too large to permit of treatment by pressure, a lateral ligature may be applied without obliterating the calibre of the vessel. In this case also there should be a reasonable prospect of the union of the wound by first intention.

(5) Considering the grave risks of gangrene which attend the sudden obliteration of the common femoral vein, the lateral ligature should, whenever possible, be applied.

18. Gritti's amputation of the thigh.

As this operation has never been received with great favour in England, the following contribution to its value may be given.

Dr. Voigt (*Wiener Med. Presse*, 1888, No. 11) reports that Albert has performed Gritti's amputation of the thigh ten times during the last eleven years—five times for malignant disease of the leg, three times for gangrene of the foot, once for elephantiasis, and once for osteo-myelitis.

In eight cases a prompt recovery followed, and an excellent stump was left. The author regards this method of amputation as the very best of those adopted for the lower end of the femur.

19. Dorsal tarso-metatarsal resection of the foot.—A new operation.

R. Gritti (*Gaz. degli Osp.*, 1888, No. 2) has devised and carried out the following operation:—The object is to remove the bases of all the metatarsal bones, together with the cuneiform bones, and parts of the scaphoid and cuboid.

A transverse incision is made across the dorsum of the foot, at the level of the bases of the metatarsal bones. This is joined by two lateral incisions made along the border of the foot on either side. The whole cut, when complete, is in the shape of the letter H.

The flaps are dissected up, and the bones exposed. The scaphoid and cuboid are now sawn through from the dorsum, and the bases of the metatarsal bones are then divided with the saw in like manner.

The bones thus separated are, as it were, dug out and removed. The anterior tibial artery is ligatured. The tendon of the extensor longus pollicis is sutured. The bones are sutured, and also the soft parts.

The operation is proposed for cases of injury or of disease involving the bones resected.

An example of the operation in a little girl of five years is reported. It was performed for caries. The child made a good recovery. The sole was flat, and the foot shortened; but the child was in no way lame.

20. Acute suppuration of the knee-joint treated by continued irrigation.

Mr. Frederick Treves (*Brit. Med. Journ.*, 7th July, 1888) points out that the prognosis in acute suppuration of the knee-joint following injury is somewhat grave; that the limb itself may be endangered, and that recovery without loss of function is practically unknown.

The author deals with two cases of acute suppuration of the knee-joint, one in a boy of sixteen, the other in a man aged twenty-three. The limb having been slung upon a proper splint, two lateral incisions are made into the joint. Through these

incisions a large fenestrated drainage-tube is passed across the articulation and under the patella. One end of the tube is connected with a small water tank placed about one foot above the level of the limb; the other end of the tube is conducted to a second tank beneath the bed, from which the water is allowed to drain away. By a system of screw-clamps, the amount of water flowing through the joint can be well and easily regulated. The joint is kept well flushed out, and is always full of water. Plain cold water containing a little boric acid is used. Under this treatment the pain at once abates, and the temperature rapidly sinks to normal. In each of the cases mentioned a full stream of water flowed through the knee-joint without intermission night or day for one entire month. The patients made an excellent recovery, and in both the functions of the joint were entirely restored.

The author is unaware that previous examples have been shown of complete restoration of function after acute suppuration of the knee-joint.

21. The treatment of tubercular disease of joints.

Mr. Arthur Barker (*Brit. Med. Journ.*, June 9, 16, and 23, 1888) deals, in a valuable series of lectures, with the whole question of tubercular disease of joints. He commences by discussing the nature of the tubercular process, and the vexed question as to the relation between scrofula and tuberculosis. He then deals with the morbid anatomy of tubercular joint disease and with certain of the clinical features of the trouble. The question of prognosis is discussed, and the position of the expectant treatment fully entered into. Upon the data furnished, the author considers the question of treatment. The principal conclusions arrived at are the following:—In the case of most of the joints of the extremities, the choice should only lie, so far as operation is concerned, between early excision, partial or complete, and amputation. The practice of excising in advanced disease is very strongly condemned. When tubercular disease is far advanced, better ultimate results follow the simple cleansing of sinuses and opening of abscesses than the performance of excision or amputation. Early exploratory incision is strongly advised, and early arthectomy as soon as it is suspected that caseation is advancing in the joint.

The paper concludes with a detailed account of the operative procedure best adapted for each individual joint.

Mr. Clutton (*Lancet*, 21st April, 1888), in a lecture upon arthectomy, gives an account of the details of the operation and of the circumstances under which it should be performed. The paper forms a good *résumé* of the subject.

Mr. B. Pollard (*Lancet*, 16th June, 1888), in an article entitled "The treatment of tubercular disease of the knee-joint by arthrectomy," points out the value of this now well-recognised mode of treatment, and gives an account of six cases.

An address by Mr. Keetley (*Lancet*, 11th Feb., 1888), dealing with the same subject, may also be here alluded to.

22. Excision of the upper jaw.

Dr. Kuster (*Berl. klin. Wochens.*, 1888, No. 14) gives the following account of thirty-eight cases of resection of the upper jaw:—

Two cases of adenoma, both sides of the jaw resected. Cure in both.

Two cases of fibroma. One died, one recovered.

Fourteen cases of primary sarcoma:

Nine were cases of giant-celled sarcoma. All were cured.

Five were cases of round or spindle-celled sarcoma. Of these, two died of the operation and three of recurrence.

Twenty cases of cancer:

Five died of the operation (four of pneumonia and one of corrosive sublimate poisoning), thirteen died of recurrence of the disease, one died of intercurrent disease, and one still lives with return of the cancer.

Thus out of thirty-eight examples of this serious operation, a complete recovery can only be claimed in eleven instances.

As to the mode of operating, the author performs tracheotomy first, plugs the trachea with a tampon, and blocks the larynx with a sponge. The usual incision is made in the median line of the upper lip, along the side of the nose and below the orbit. The orbital plate of the maxilla is left. The tracheotomy tube is retained for some time, the larynx being lightly plugged with iodoform gauze to prevent decomposing fluid from entering the trachea.

It is surprising to find that in the face of these statistics the author still recommends excision of the upper jaw in cases of cancer and soft sarcoma.

23. The excision of scrofulous glands.

Dr. Grünfeld (*Zeitschr. f. Heilk.*, Band viii. p. 191) speaks strongly in favour of the treatment of strumous glands of the neck by excision.

He deals with 240 cases of the disease, and enters, to some extent, into the general pathology of the trouble. Of the 240 cases, 150 were subjected to operation, 125 being treated by excision. In no less than 33 of these cases the internal jugular vein was laid bare during the operation, and in four instances a *ligature* was applied to that vessel. In the remaining 25 cases of

operation, scraping with the spoon was resorted to. In all these latter examples, sinuses or open suppurating cavities existed, and the glands involved were very closely adherent.

The results of the operations may be considered to have been successful, and only six deaths can be ascribed to general tuberculosis.

The author appears, in his excision operations, to have made extensive flaps, and to have frequently divided the sterno-mastoid muscles. Extensive incisions and the formation of musculo-cutaneous flaps are, however, certainly not needed, and the violent nature of some of the operative procedures is shown by the fact that sloughing of the connective tissue of the neck followed in as many as eleven instances.

Mr. William Knight Treves (*Lancet*, July 21, 1888) speaks of the treatment of long-standing scrofulous glands with drugs, in the hope of promoting absorption, as absurd. The method of scooping out the contents of softened glands he regards as no better than the expectant one. It entails a number of openings and a number of suppurating cavities which cannot, from their surroundings and condition, readily contract and heal. After the operation other glands which, although enlarged, had not previously softened, gradually break down, the cellular tissue becomes inflamed and brawny, hectic continues, and the patient is apt to die, worn out by the long-persisting trouble.

The treatment which is especially advised is that by excision. It represents, in the great majority of cases, the only operative measure of any value. As regards the operation the author writes as follows:—"The entire removal should be effected by dissection alone; no directors, handles of scalpels, or fingers, should be used to separate the glands from the surrounding cellular tissue. Cut down on the surface of the mass, dissecting the cellular tissue as closely off the capsule as a nerve is cleaned in the dissecting-room. When sufficient of the anterior surface is exposed, pass a thick thread through the gland, draw it gently forward, and continuing the dissection, get gradually to the back of the gland, removing thus portions of the mass at a time, each portion comprising perhaps one gland, perhaps several closely connected with each other. I have several times had to divide the external jugular vein, and twice the sterno-mastoid muscle, but as a rule the glands can be displaced from beneath this muscle. In none of the cases has there been any serious hæmorrhage, and all the cases operated on have recovered."

Few, if any, sutures are used, the edges of the wound being brought together and maintained in position by means of pads of antiseptic cotton.

No drainage-tubes are used. The patient's head is fixed after the operation by means of sandbags. No movements of mastication are allowed, the patient being fed for awhile simply on fluid food.

Nine illustrative cases are given.

24. The excision of tubercular testes.

Mr. Wm. H. Bennett (*Med. Chir. Trans.*, vol. lxxi. p. 139) gives an account of five cases of tubercular disease of the testes. The cases are reported with great care and detail. In one only was castration performed. Mr. Bennett discusses the desirability of early castration in certain cases, deals with points connected with the possible origin of tubercular testis as a purely local affection, its tendency to generalisation as shown by the implication of distant parts, especially the spine, and the relation of the disintegration of the original disease to general tubercular infection. He ventures upon the following conclusions, which certainly will be endorsed by most practical surgeons:—

1. Inflammation of the testis or epididymis as the consequence of injury or direct irritation may result in the tuberculous disease of a purely local kind, which, if left to itself, tends surely to generalisation.

2. The greatest tendency to general infection is at a time subsequent to the breaking down of the original deposit, which may therefore be called "the dangerous period."

3. Parts remote from the testis primarily affected may be involved by the disease before it invades either seminal vesicle, or the opposite epididymis and testicle.

4. The rational treatment for these cases is castration upon the appearance of symptoms of suppuration about the original disease—i.e. at the onset of "the dangerous period."

25. The treatment of caries.

Dr. Fickl (*Wiener med. Woch.*, 1888, No. 1) advises the use of a solution of the acid phosphate of lime. All the diseased portion of the bone is scraped away, and the resulting cavity is stuffed with gauze soaked in the lime solution. This dressing is changed every few days. Sufficient clinical evidence of the special value of this measure is not forthcoming.

26. The operative treatment of elephantiasis.

Dr. Helferich (*Deutsche med. Woch.*, 1888, No. 2) assumes that an obstruction in the lymph passages is the primary lesion in elephantiasis. For slight degrees of elephantiasis of the limbs Helferich considers that rest, with elevation of the part, massage, and the use of elastic bandages are quite sufficient. For graver cases these measures are of no avail. The parts have become

structurally thickened, and the skin has lost its elasticity. The following operation is advised:—Such parts of the skin as can be removed in folds are cut away. The parts excised are cut away in the form of narrow longitudinal strips. Each strip includes not only the skin, but also the thickened subcutaneous tissue beneath it. Esmarch's tourniquet is applied during the operation. The proceeding is said to answer admirably in the lower limb (an illustrative case is given). The wounds heal by first intention, and the limb soon diminishes in size. When the healing is completed the progress towards recovery is hastened by massage and the induced current.

27. Macroglossia treated by ligature of both lingual arteries.

Dr. Fehleisen (*Berliner klin. Wochens.*, 1887, No. 50) advises the ligature of both lingual arteries for the relief of congenital macroglossia. He reports one case in a child aged thirteen months. The tongue became rapidly reduced, underwent a subsequent increase in size, and finally became reduced again. It originally projected some way beyond the lips. One year after the operation it was so far reduced in size as to lie with the tip between the teeth. This operation has been performed before for macroglossia, but apparently with less effect in most of the cases.

28. Transplantation of mucous membrane.

Dr. A. Wolfier (*Beilage zum Centralbl. f. Chirurg.*, 1888, No. 24). The method described is mainly employed in cases in which the mucous membrane has been destroyed and injurious cicatrization has followed. It may be used to repair loss of mucous membrane in the mouth, rectum, urethra, eyelids. The gap made by excising the scar is filled up with entirely new mucous membrane. This is obtained from the human subject, from cases of prolapsus uteri and prolapsus recti. The membrane is removed in strips of from 3 to 4 c.m. in length and about 1 to 3 c.m. in breadth. The graft is united to the part by sutures. Animal mucous membrane has been employed, *e.g.* mucous membrane of the frog's stomach, and of the gullet of the pigeon or rabbit, or of the bladder of the rabbit. The value of such transplantations has, however, not yet been demonstrated. The author speaks highly of the method when human mucous membrane is employed, and gives details of seven cases. Three of these concerned impermeable strictures of the urethra. External urethrotomy was performed, the scar tissue excised, and new mucous membrane transplanted. It is claimed that a good result followed.

29. The mode of tapping the antrum.

The best method of evacuating pus or other fluid from the antrum of Highmore is still a matter under dispute. Dr. Ziem (*Théráp. Monats.*, 1888, p. 148) strongly urges the opening of the antrum through the alveolar process, the contained fluid draining into the mouth. An American dental drill is employed with a head $1\frac{1}{4}$ mm. in width. The instrument is entered between the second bicuspid and the first molar, or between the two bicuspids, and is placed well on the alveolar border of the maxilla.

Dr. Schmiegelow (*Hosp. Tidende*, 1888, No. 3; Danish) also recommends the opening of the antrum by means of a drill introduced through the alveolus. He gives an account of 20 cases of empyema of the antrum. Fifteen of these were treated by drilling, and in all an excellent and rapid cure followed. The author points out that in the great majority of cases of empyema of the antrum the trouble is caused by disease of teeth.

Dr. Weinlechner (*Wiener klin. Woch.*, 1888, No. 8) speaks in an equally decided way in favour of opening the antrum through the nose. The thin bony wall separating the antrum from the nasal passage is divided by means of a pair of scissors curved on the flat, and introduced through the nostril. After the opening has been made its patency is secured by means of an indiarubber catheter.

30. Removal of a foreign body from the left bronchus.

Mr. Thomas Smith (*Med. Chir. Trans.*, vol. lxxi. p. 113) reports the following case in conjunction with Dr. Cheadle. A girl, aged nine, was found to have drawn the metal cap of a pencil into her bronchus. The foreign body was about an inch in length. The left lung became almost completely collapsed. Tracheotomy was performed eighteen days after the accident. A probe passed down into the bronchus at once revealed the foreign body, and it was removed by a pair of forceps such as are used for intubation of the larynx. Mr. Smith remarks: "I would venture to recommend the plan of attaching the edges of the tracheal wound to the skin while searching for foreign bodies in the air-passages below. It keeps the trachea widely open throughout the operation, which is a great help to the surgeon and a source of safety to the patient." The child made a good recovery.

Dr. Cheadle states that, out of thirty cases of foreign body in the bronchus which he finds recorded in English journals, the foreign substance was lodged in the left bronchus in sixteen instances, and in the right in fourteen. This affects the

frequently repeated statement that the foreign body usually finds its way into the right tube.

31. The radical cure of hernia.

A large number of papers upon this subject have appeared during the past year. The following are among the most important:—

Mr. Mitchell Banks (*Brit. Med. Journ.*, Dec. 10, 1887) gives an analysis of 106 cases of operation, 68 of which were cases of hernia without strangulation, while in 38 strangulation was present. He expresses these conclusions as to the nature and value of the operation:—

1. The wearing of a well-fitting and well-acting truss is by no means so great a burden as is represented.

2. The operation is very seldom indeed required in children. A well-fitting truss, worn for a sufficiently long period, will cure the vast majority of herniæ in children. In a few cases where there is adherent omentum, or where the hernia is very large, or where no proper precautions are observed with reference to the wearing of a truss, an operation may be performed.

3. In small femoral ruptures with adherent omentum the operation is especially to be advised. The same applies to inguinal ruptures with adherent omentum, and to such as are of very large size.

4. No patient should be operated upon if the rupture can be well kept up by a truss.

5. A light support should always be worn after the operation.

The operation is not in the proper sense a radical cure, since the inguinal ring is not closed.

Dr. William Macewen (*ibid.*) describes his especial operation in greater detail (see "Year-Book" for 1887). He gives an account of 81 cases without a death; 65 were for inguinal hernia, 16 of these being strangulated ruptures, 16 were for femoral hernia, 13 being strangulated previous to the operation.

Dr. Ball (*ibid.*) describes the operation of torsion of the sac, with which his name is now so well associated. Both this paper and the preceding one are admirably illustrated.

Mr. Thornley Stoker (*Brit. Med. Journ.*, Dec. 3, 1887) sums up his opinions as follows:—

1. That, particularly in young children, operation should only be undertaken when minor measures have failed or are inapplicable.

2. That, on the ground of its safety, certainty, and precision, the operation by dissection is to be preferred.

3. That twisting of the sac is a safe and efficient aid to the operation.

4. That sutures, so far as their use in closing the canal is concerned, serve but a temporary purpose, and that their chief end is to excite a sufficient lymph exudation.

5. That sutures, therefore, need not be introduced tightly, and that trouble from testicular swelling may thus be avoided.

6. That the permanent retention of wires is unnecessary, and possibly hurtful.

7. That while a uniform support to the inguinal region is desirable for some time following operation, it cannot safely be afforded by a truss furnished with a pad.

Dr. Heuston (*ibid.*), in dealing with femoral hernia, advises that the sac be closed by torsion, and allowed to form a plug in the femoral canal; that the twisted neck of the sac be attached by suture to Poupart's ligament; and that the deep sutures be united in proper and consecutive order by means of hidden sutures, the fascia transversalis being first united.

The author advises chromatised gut throughout the operation.

Among other monographs upon this subject may be named:—

Mr. Kendal Franks (*Brit. Med. Journ.*, Dec. 3, 1887), advocating the method of operation by dissection.

Mr. Arthur Barker (*ibid.*), an account of 35 operations.

Mr. Mayo Robson (*Brit. Med. Journ.*, Dec. 17, 1887), an account of 26 operations.

Mr. Puzey (*ibid.*), on the permanency of the relief in cases submitted to the "radical cure."

M. Richelot (*Bull. et Mém. de la Soc. de Chir. de Paris*, t. xiii. p. 641), on the question of submitting cases of congenital hernia to the operation for radical cure. The various views are discussed, and the question of removing the testis during the operation considered. A discussion followed the reading of the paper. The general conclusions coincide with those advanced by English surgeons.

M. Usiglio (*Ann. Univ. di Med.*, 1888, Bd. 283) removes the fundus of the sac, and then places an indiarubber tube in the neck of the sac. This is secured *in situ* by means of a knot (circular suture). The tube is removed in one to three days, and the neck of the sac is then closed by drawing tight the knot. The practice is advised in cases of radical cure performed in connection with the relief of strangulation. It permits of peritoneal drainage.

32. Drainage of the peritoneum.

Dr. Pozzi (*Ann. de Gyn.*, 1888, t. xxix. p. 255) claims that it is only by capillary drainage that the peritoneal cavity can be

properly cleared of fluid. He effects this by means of strips of iodoform gauze or by means of iodoform cotton wicks. These strands of gauze or wick are introduced into the peritoneal cavity and are allowed, on the other hand, to hang out of the wound. This method of drainage Pozzi especially employs after vaginal removal of the uterus. He considers that peritoneal drainage should be employed: 1. When there is any fear of secondary hæmorrhage; 2. When any septic or non-septic material is left in the peritoneal cavity; 3. When there have been large losses of peritoneum.

It is not probable that this method will commend itself to English surgeons. The present method of drainage with a glass tube and an exhausting syringe has satisfied all requirements.

33. Gastrostomy.

Dr. Sonnenburg (*Berl. klin. Wochens.*, 1888, No. 1) reviews once more the prospects of gastrostomy in cases of cancer of the œsophagus. He speaks highly of the operation, but urges that, to be successful, it must be performed early. He maintains that the operation, as an operation, is not dangerous, and that its perils are less than those attending the passage of œsophageal bougies. The incision should be 5 to 6 c.m. in length, and should be made parallel to the margins of the ribs and about 2 to 3 c.m. from them. The stomach is best sought for and drawn forth by the fingers, and the opening should be made as near the cardiac end as possible. The serous coat of the viscus should be attached to the parietal peritoneum by from 12 to 20 sutures. The stomach is opened at the end of a few days by Paquelin's thermocautery. In about eight days a silver cannula, closed by a proper plug, is introduced.

Five examples of the operation are given; the patients were between the ages of forty and fifty-eight years. One patient recovered, but the subsequent history of the case is not known. One patient died the day after the operation, and another in a short time. In the two remaining cases life was prolonged for a few weeks.

It cannot be said that this contribution provides the evidence that Dr. Sonnenburg claims for it. The operation would not appear to be increasing in favour, and it has still to be shown that it deserves to rank among recognised and justifiable surgical procedures.

34. Extirpation of a constricted portion of the liver.

Dr. Langenbuch (*Berl. klin. Wochens.*, No. 3, 1888; and *Brit. Med. Journ.*, vol. i. p. 1021, 1888) describes the case of a woman, aged thirty, who had suffered for eight years from abdominal

pain, most marked when she lay down; when lying on the back, palpitations and a feeling of fear came on. In the upper part of the abdomen a swelling, the size of a fist, could be felt. It was hardly perceptible externally, and extended from the ensiform cartilage to within two and a quarter inches of the umbilical level. The swelling was smooth, tough, and elastic; its inner border was thick. Percussion impaired, the dulness being continuous with that corresponding to the area of the liver. Echinococcus or, more probably, constriction of liver, occasioned by clothing, was diagnosed. An exploratory incision was made, and a large mass of liver substance, cut off by a deep constriction from the left lobe of the liver, was discovered. The position of the constricted mass explained the high degree of pain and discomfort which it caused, strongly contrasting with the trifling inconvenience observed when the right lobe is similarly affected. The mass in this case pressed the pyloric portion of the stomach, the duodenum, pancreas, aorta, with several great nerves and ganglia of the sympathetic, against the vertebral column. The mass of liver was amputated, several pedicles being made out of the bands of connective tissue which still united it to the main part of the liver, and carefully ligatured. Hæmorrhage occurred on the evening of the operation, the abdominal cavity was opened up again, clots removed, and a vessel ligatured. The patient recovered for a time. Gradually ascites set in, with œdema. Dr. Langenbuch was uncertain whether the ascites should be attributed to the high degree of hydræmia present in this case, or to diminution of the area of the portal circulation. The abdomen was twice tapped, when the patient is said to have recovered completely.

35. Typhlitis treated by operation.

Mr. Frederick Treves (*Med. Chir. Trans.*, vol. lxxi. p. 165) deals briefly with the pathology of the conditions known as typhlitis, perityphlitis, and paratyphlitis. He points out that little is known of the spontaneous catarrh of the cæcum, to which typhlitis is so frequently ascribed; that the abscess after typhlitis is always, in the first instance at least, within the peritoneum; and that an inflammation of the connective tissue of the iliac fossa is not to be anticipated in connection with troubles in the cæcum, since the cæcum is always wholly invested with peritoneum.

Mr. Treves points out that the appendix is probably the part primarily involved in these affections; and that in relapsing typhlitis it is possibly involved without exception. In the case of patients who have had repeated attacks, and in whom the attacks are increasing in severity, it is proposed that the appendix

should be excised during the calm interval following convalescence from an outburst. The appendix in such cases can often be demonstrated through the parietes. It should be excised, the mucous membrane united by a continuous suture, and the serous coat closed by Lembert's suture. The case is given of a man, aged thirty-four, who had several attacks of typhlitis. When he had quite recovered from the last attack the cæcal region was exposed, and a greatly distorted appendix discovered. This was dealt with by merely dissecting away the appendicular mesentery, the tube at once becoming straight. The patient made an excellent recovery. The operation was performed in 1886.

Mr. Treves (*Lancet*, Nov. 10, 1888) alludes to another case of relapsing typhlitis under his care. The patient had had three severe attacks. When quite convalescent from the third attack, the abdomen was opened, and a diseased and distorted appendix discovered and excised. This patient also made a sound recovery; and up to the present date has had no recurrence of the trouble.

Dr. Brenner (*Wiener klin. Wochens.*, 1888, No. 9) reports four cases of laparotomy for typhlitis. In all cases the appendix was found to be involved. It was bent upon itself, and adherent to the cæcum. An encysted collection of pus existed in the neighbourhood. The appendix was ligatured and removed. A good result followed. The author has in these cases followed the usual practice of evacuating the abscess formed about the cæcum, and completing the operation by excising a distorted appendix.

Dr. Bull, of New York, in an excellent paper read before the Medical Society of London, Nov. 5, 1888, enters fully into the question of the treatment of the abscess connected with typhlitis. He advises very early incision, especially in acute cases, and recommends the use of the exploring-needle to demonstrate the existence and position of the pus.

In commenting on Dr. Bull's paper it should be noted that a very large number of cases of typhlitis are cured by medical means alone; and that the introduction of an exploring-needle in the vicinity of the bowel is not always a proceeding free from danger.

Dr. T. G. Morton (*Journ. of the Amer. Med. Assoc.*, 1888, vol. x. No. 3) advises early operation as soon as evidences of supuration exist. The abscess should be opened by an incision in the right semilunar line. The appendix, if found diseased, is ligatured and removed. Any perforation of the cæcum should be closed by Lembert's suture. In commenting upon the two last-named items of advice, it may be suggested that simple ligature of the

appendix, under the conditions named, is not safe. With regard to perforations of the cæcum, it must be remembered that the serous membrane will have been destroyed about the aperture; and that the part will have been bathed in faecal matter and pus. To close such an aperture, Lembert's suture will certainly not suffice.

Dr. John Macdougall (*Lancet*, Sept. 22 and 29, 1888) has contributed a very full and valuable paper upon the question of operation in typhlitis. He demonstrates the part the vermiform appendix plays in the production of perityphlitis. He advises early operation, as soon as the presence of pus is evident. In one case he cut down upon the cæcum, and found the appendix sloughy and perforated. The process was too adherent to be removed. The sloughy parts were, however, excised, and the ends of the tube closed. An excellent recovery followed.

Sir Dyce Duckworth (*Lancet*, Oct. 6, 1888) has contributed a valuable paper upon the nature and treatment of typhlitis. He views the subject from a medical standpoint, but takes a liberal view of surgical interference. The paper serves to point out that the operation is not so necessary in these cases as some would seem to infer; and the paper is worthy the attention of all surgeons interested in the subject.

36. Hernia into the foramen of Winslow.

Mr. Frederick Treves (*Lancet*, Oct. 13, 1888) gives an account of a case of hernia into the foramen of Winslow, for which laparotomy was performed. The cæcum and the whole of the ascending colon were found to have passed through the foramen and to be strangulated. Reduction was impossible, and the patient died unrelieved. At the autopsy the bowel could not be reduced until the hepatic artery, portal vein, and bile duct had been divided.

Mr. Treves gives an account of the only other known examples (four in number) of this accident, and points out that the condition may be diagnosed during life and before exploration. He points out, however, that when strangulation has occurred the condition is entirely beyond the scope of surgical treatment. The present case is the first in which laparotomy was undertaken.

37. The results of excision of the rectum for cancer.

Dr. F. König (*Beilage zum Centralbl. f. Chirurg.*, 1888, No. 24). In this important paper the author deals with the prognosis of the above operation. He deals with seventy-seven cases of cancer of the rectum. Of this number seventeen were rejected as unfit for operation. In the remaining sixty

cases excision was performed. Out of the sixty cases, sixteen operations involved only excision of the anus and lowest part of the gut, while in forty-four cases a substantial segment of the rectum was removed.

Fifteen times the peritoneal cavity was opened during the latter series of operations, and in only one instance did peritonitis follow.

The patient is prepared by very careful dieting, and by careful evacuation of the bowel. The gut is loosened by the fingers, and from two to ten ligatures are called for. The wound is dressed with iodoform gauze.

In 24 per cent. of the cases the operation resulted in death; 10 per cent. have remained well for three years, and 18 per cent. for two years. Nine patients are totally unable to retain their feces; three are the subjects of stenosis.

38. The treatment of anal fissures and hæmorrhoids by gradual dilatation.

Dr. Walker (*New York Med. Journ.*, vol. xlv. p. 128) makes use of the following treatment:—The anus is gradually stretched by means of a speculum repeatedly introduced. The speculum is an ordinary bivalve rectum speculum, the blades of which can be separated by means of a screw. The instrument is inserted, and the anus very gradually stretched. The process should be painless.

The speculum is used in this way every two days, and the treatment is extended over some weeks. It is claimed that fissures are cured by this measure, and that piles disappear. No paralysis of the sphincter is produced, and no pain.

The *rationale* of the treatment is not explained. It may be questioned as to how far it departs from merely expectant treatment, and to what extent it has effect upon deep fissures and large hæmorrhoids.

39. Excision of fistula-in-ano.

M. Quenu (*Bull. et Mém. de la Soc. de Chir. de Paris*, t. xiii. p. 533) resects the whole of the fistulous tract by means of clean incisions. A large gap is thus left, the walls of which represent freshly-cut surfaces made in healthy tissues. These surfaces are united by sutures, and an attempt is made to secure primary healing. The wound is first closed at its rectal extremity. The higher sutures are of catgut, the more external are of silver. The sutures are deeply passed. The treatment may be employed even in deep fistulæ, but is not applicable to complex fistulæ with diverticula. Such sinuses the author treats by means of the thermo-cautery. M. Quenu reports nine examples of this operation.

In six cases it is claimed that a complete cure followed; in two the treatment failed, and in the remaining case a partial success followed the excision. This method of treatment was advocated by some, many years ago, but met with little support. It may prove more successful now that the methods of wound treatment are better understood.

40. Cerebral surgery.

Dr. William Macewen, of Glasgow (*Brit. Med. Journ.*, August 11, 1888) has published a most interesting series of cases occurring in his own practice to illustrate the use and progress of cerebral surgery. These cases included instances of abscess of the brain and of the removal of tumours from the brain for the relief of epilepsy or paralysis. Out of 21 cases subjected to operation, 18 recovered and 3 died. Of those who died, all were *in extremis* when operated on. Of the 18 who recovered, 16 are still alive and in good health. Two have since died—one, eight years after the operation, of Bright's disease; and the other, 47 days after the operation, from an attack of tubercular enteritis.

"In cerebral surgery," writes Dr. Macewen, "not only does one require to localise the lesion, and to select suitable cases, but also, after exposing the brain and its lesion, to judge when to advance and when to hold the hand. In a case rightly localised from the motor symptoms, a tumour was exposed in the leg and arm centres, on the left side of the brain; but its dimensions were such as to cause me to refrain from removing it, as it would have led to a hemiplegia of a much more pronounced character than was present. Instead, the vessels which supplied it with nutriment and which ran into its substance, from the surface, were all ligatured, in the hope that this would effect a restraining influence on its growth. The patient recovered, and is considerably improved.

Dr. von Bergmann (*Deutsche milit. Zeits.*, August, 1887) deals in an elaborate paper with the subject of traumatic epilepsy.

The material embraces 8,985 cases of injury to the head. Vertigo or epilepsy or epileptoid conditions followed in 132 cases. The paper also deals with 17 cases of reflex epilepsy due to injury to peripheral nerves. In the treatment of cases of epilepsy following injury to the head, the author is opposed to mere trephining. He urges that the cicatrix in the brain and the disturbed part of the cortex should also be removed. The cases for treatment by any operation must, however, be carefully selected.

Mr. Arthur Hare (*Lancet*, April and March, 1888) has given an excellent *résumé* of the main facts, anatomical, clinical, and operative, connected with cranial surgery.

41. Neurotomy of the third division of the fifth nerve for neuralgia.

Mr. Bland Sutton (*Med. Chir. Trans.*, vol. lxxi. p. 107) describes the case of a man aged 64, who was the subject of cancer of the right side of the mouth, far too extensive to admit of removal. The patient suffered intolerable spasmodic pain in the course of the third division of the fifth nerve, and little relief could be obtained by medical means. The following operation was performed :—
“I raised up a flap from the cheek immediately below the zygoma, and exposed the condyle and coronoid process of the lower jaw. With a trephine a circular portion of the ramus of the jaw was removed, involving one half of the neck of the condyle, and limited above by the sigmoid notch. This enabled me to pass my finger above the external pterygoid muscle, and, aided with a pair of forceps, the speno-maxillary fissure was reached, and the pulsations of the internal maxillary artery distinctly felt. The cavity was now so deep that it accommodated the whole length of my index finger, and so dark that even by the aid of a lamp the nerve could not be recognised. With the finger the foramen ovale could easily be distinguished, and likewise the spine of the sphenoid bone. With a blunt-pointed bistoury the structures emerging from the foramen ovale were freely divided.” Very free bleeding followed, and as the bleeding vessel could not be picked up the wound was plugged. On the removal of the plug next day, free hæmorrhage again occurred, to check which the common carotid was ligatured. The wound in the face was stuffed from the bottom. The patient was relieved from his pain, and the parts supplied by the third division of the fifth were found to be anæsthetic. Four months later slight pain returned, and the nerve districts previously benumbed became again sensitive. The man lived in comparative comfort for eight months. The post-mortem showed that the nerve had been divided immediately on quitting the skull.

Although it may be allowed that the operation described was justifiable in the present case, the procedure could hardly be recommended for ordinary cases of intractable neuralgia of the third division. The operation is a little uncertain; a cut is made in the dark, and it is difficult to understand how the middle meningeal artery can avoid division. One would presume also that the muscular branches of the inferior maxillary nerve would be divided at the same time. Neurotomy, moreover, in any case, affords, as a rule, but temporary relief, and such relief may possibly be obtained by individual section of the lingual and inferior dental branches of the nerve. If operations are to be conducted

upon nerve trunks for the relief of neuralgia, the trunk should be well exposed, should be isolated and picked up, and a portion of its substance actually excised.

Dr. Salzer (*Beilage zum Centralbl. f. Chirurg.*, No. 24, 1888, p. 3), has exposed this nerve at its point of exit from the foramen ovale for the relief of intractable neuralgia. He approaches the foramen at a point just in front of the temporo-maxillary articulation. He divides the temporal muscle and separates it, together with the soft parts which cover it from the skull. The inferior maxilla is disarticulated (or temporarily resected), and is depressed, so as to be out of the way of the operation area.

Two examples of this procedure are given. In both it is claimed that a cure followed, the periods that have elapsed since the operation being respectively ten months and five months.

Dr. Schlange (*ibid.*) reports two cases in which the nerve was divided at the foramen ovale. Both patients recovered. In one case the operation was performed only a few days before the report was made. In the other case the nerve was divided in 1886, and the patient has since remained free from neuralgia.

Dr. Kronlein (*ibid.*) appears to have been one of the first surgeons to have performed this operation, and claims that a cure has followed the procedure in the three cases in which it has been carried out.

Dr. Isra (*ibid.*) reports two cases, and Rydygier and Madelung one case each.

Dr. Mikulicz (*ibid.*, p. 38) recommends the following method :— A curved incision is made at the mastoid process, and is carried down along the anterior border of the sterno-mastoid muscle to the level of the great cornu of the hyoid bone. Thence it is continued up so as to cross the inferior maxilla at the anterior margin of the masseter muscle. The periosteum in front of this muscle having been separated, the jaw is divided vertically just behind the wisdom tooth. This is effected by means of a chain saw. The cavity of the mouth is not opened. The two pterygoid muscles are separated from the maxilla. The ascending ramus of the jaw is now drawn upwards and the body of the bone forwards. A deep space is thus exposed, at the bottom of which the third division of the fifth nerve, together with its branches, is lying. The trunk is reached by following the gustatory nerve up to its point of origin. The nerve and its branches are well exposed, and can be readily dealt with. After the neurotomy or neurectomy has been performed, the parts are restored to their normal positions, and the divided ends of the jaw are united by sutures.

A case is cited in which the operation was performed one and

a half years ago for neuralgia. The patient is reported to be cured, and the movements of the lower jaw to be restored.

These operations are far more complete than that described by Mr. Sutton. They are, however, extensive and serious procedures, and it may be questioned in how many cases the needs of the case demand so grave a mode of treatment.

42. The removal of tumours of the spinal cord.

Dr. Gowers and Mr. Victor Horsley (*Med. Chir. Trans.*, vol. lxxi. p. 377) report the following remarkable case:—A gentleman, aged 42, began in 1884 to suffer from severe pain in the back, which became intense, and was followed by so irritable a mental state that the question was raised as to his sanity. In 1887 loss of power appeared in the legs, became complete, and was attended by impaired sensation and bladder troubles. Nothing abnormal could be detected on an examination of the vertebral column. A tumour pressing upon the spinal cord was diagnosed, and its removal determined upon. The grounds upon which the diagnosis was made are given in great detail in the paper.

The operation was performed by Mr. Horsley, on June 9th, 1887. Ether was administered, and the patient placed in the semi-prone position on the right side. The incision was made in the median line, extending from the third dorsal spine to the seventh.

The spinous processes, laminae, and mesial parts of the transverse processes were exposed. The bleeding, which was very free, was controlled by Wells' forceps.

The fourth, fifth, and sixth dorsal spines were then cut off close to their bases; and the laminar arch of the fifth vertebra was then trephined with a $\frac{3}{4}$ -inch trephine, the pin being placed in the middle line. The laminae of the fourth, fifth, and sixth vertebrae were then removed with bone forceps. The dura mater was opened in the middle line, and two inches of the cord was exposed. Nothing was discovered. The laminae of the seventh, second, and third vertebrae were then removed, together with a part of the laminar arch of the first dorsal vertebra. An oval tumour was then discovered resting upon and attached to the highest root of the left fourth dorsal nerve. The growth was dissected from the surface of the cord. The parts were washed with a 5 per cent. carbolic solution; the edges of the wound in the dura mater were approximated, but not sutured. The soft parts were brought together by several deep sutures, and by a number of smaller sutures involving the skin only. A drainage-tube was introduced, and a dressing of carbolic gauze applied. The tumour proved to be a fibro-myxoma about the size of a hazel-nut.

During the subsequent progress of the case the temperature did

not reach 100. Violent pains and spasms in the lower limbs were complained of. After a tedious and painful convalescence the patient made a good recovery.

In January, 1888, he could walk three miles with ease. The scar was firm, and of almost bony hardness. The patient was practically quite free from pain and discomfort. In June, 1888, he is reported as being in excellent health, and capable of a sixteen-hour day's work, including much standing and walking about.

The monograph deals with the reasons which led to the adoption of the operation, and enters very fully into the whole question of tumours of the spinal cord from a clinical and pathological standpoint. A tabular account of fifty-eight cases of tumour involving the spinal cord is given.

Dr. William Macewen, of Glasgow (*Brit. Med. Journ.*, Aug. 11, 1888), has demonstrated, in an address delivered before the British Medical Association, that the surgical treatment of troubles involving the spinal cord was inaugurated by him in 1882. He gives an account of six cases in which the spinal canal was opened by removing the posterior arches of the vertebræ. The first operations were undertaken for the relief of paraplegia, due to angular curvature of the spine. In such cases, pressure may be exerted on the cord either by connective tissue neoplasms or by direct displacement of the bodies of the vertebræ, both lessening the lumen of the canal. By lifting the laminae from the affected part, the tumour could be removed, and relief at the same time given to the compressed cord, should the osseous walls in front be found to encroach upon the calibre of the canal. The first case was one of paraplegia, with incontinence of urine and fæces, due to a connective tissue tumour at the seat of an angular curvature of the spine, in a boy aged nine. The laminae of the fifth, sixth, and seventh dorsal vertebræ were removed. The operation presented no difficulty. A complete recovery followed. Four other cases of like nature were treated in the same manner. In three of these complete recovery followed. In the others, death followed in one case, some months after the operation, from general tuberculosis; and in the other the patient succumbed one week after the spinal canal had been opened up. In the sixth case, paraplegia followed an injury to the lower dorsal spine, in a man aged 22. There was absolute motor paralysis, with incontinence. The posterior arch of the twelfth dorsal vertebra was found to be depressed; and beneath it was a connective tissue tumour. The depressed bone and the tumour were removed, and the patient made a moderately good recovery. He can now walk with ease, but with a paraplegic gait.

ORTHOPÆDIC SURGERY.

By W. J. WALSHAM, F.R.C.S. Eng.,

*Assistant-Surgeon to, and Surgeon in Charge of the Orthopædic Department at,
St. Bartholomew's Hospital.*

I. The operative treatment of club-foot.

During the past year a number of interesting papers have been published on the operative treatment of club-foot, a subject, moreover, which was selected for special discussion at the recent meeting of the British Medical Association at Glasgow. Except for slight cases of the deformity, and perhaps for slightly more severe degrees in young children, the younger generation of orthopædic surgeons are fast arriving, if they have not already arrived, at the conclusion that more radical methods of treatment are required for the cure of congenital club-foot than those which were commonly believed to suffice a few years ago. In very slight cases in infants, manipulation and holding the foot in the normal position for longer or shorter periods daily, with or without the application of a light splint at night, is, no doubt, all that is commonly required. For severer cases, division of the tendo Achillis, and of any tense band that may be met with in the sole of the foot, will, in a number of instances, be the only operation needed. The division of the tibial tendons, which it was formerly taught ought to be undertaken before the division of the tendo Achillis, is now by many no longer considered necessary, or indeed by some to be of any service whatever. The old method of placing the foot in the deformed position after tenotomy for a few days for fear of the ends of the tendon if separated not uniting, and then gradually bringing the foot to the natural position by means of a Scarpa's shoe or the like appliance, appears now to be almost entirely abandoned, except perhaps at some orthopædic hospitals; and there is a general consensus of opinion that if the parts are subsequently kept at rest for a week or fortnight the tendo Achillis may be separated immediately after division as much as half an inch, or even an inch, without

any fear of non-union. The advantages of plaster of Paris over the older forms of mechanical appliances for holding the foot in position after manipulation are now almost universally admitted, although, as may be seen in one of the following extracts, there is something to be said in favour of the simple splint advocated by Dr. Beely for this purpose. In yet more severe cases, where after tenotomy the foot cannot be manipulated into position by any justifiable manual force, the division of the ligaments on the concave inner side of the foot and behind the ankle (*syndesmotomy*), which has been so ably advocated by Mr. Parker, may often be practised with advantage; or if this does not suffice, Phelps's open incision on the inner side of the sole down to the bones may sometimes be employed for effecting the desired end. Or stopping short of this, the subcutaneous division of all the soft parts on the inner half of the sole recommended by Professor George Buchanan, including the deep ligaments which bind the astragalus to the scaphoid, would appear to be a no less effective, though a somewhat milder, measure. Opinions still differ, as will be noted in the following abstracts, as to whether tarsectomy, when one of the above methods has been employed, is ever necessary or even justifiable. There appears, however, to be a growing feeling that there are a certain class of cases in which some operation having for its object the removal of a portion of the tarsus, either a wedge-shaped piece of one or more of the tarsal bones, or one of these bones entire, as the astragalus, is essential if the deformity is to be entirely and satisfactorily overcome. Of these operations, Lund's operation of the removal of the astragalus is held in increasing favour, and there can be no doubt that it is, in certain forms of the deformity, an admirable method of rapidly and radically treating it. Moreover, the after-history of cases thus dealt with is most encouraging. In a case operated on by Mr. Lund more than sixteen years ago, the patient, now grown up to manhood, is able to walk fairly well without any perceptible deformity. In this case both astragali were removed.

That it is absolutely essential in some cases to perform a tarsectomy for the satisfactory removal of the deformity I am most thoroughly convinced, not only as the result of clinical experience, but also by a study of the morbid anatomy of the parts. There are specimens in the museum of St. Bartholomew's Hospital which show conclusively that rectification of the foot would be impossible without some bone removal.

Marsh (*Lancet*, Feb. 18th, 1888, p. 313) advises rapid restoration of the foot to its normal position after tenotomy. He corrects at first a third of the deformity, and encloses the foot in plaster of

Paris; at the end of a week or ten days he corrects another third; and at the end of another week he puts the foot up in the normal position in plaster of Paris, and thus leaves it for three weeks. He speaks of his method as giving highly satisfactory results.

Marshall (*Lancet*, March 3rd, 1888, p. 447) has practised the "immediate treatment," and in no instance has had to regret it. He prefers in infants to divide the tendo Achillis before the tibials. In the majority of cases, when the tendo Achillis is divided, he has had no need to interfere either with the plantar fascia or the tibials.

Noble Smith (*Lancet*, Feb. 28th, 1888, p. 395) states that all cases operated on by him by the "immediate method" have been satisfactory, and some of them have been very severe cases of talipes.

Walsham (*Lancet*, May 19th, 1888, p. 971) gives his experience of the treatment of club-foot by the method of immediate restoration of the parts to their normal position after tenotomy. His plan has been to divide the tendo Achillis, break down any adhesions by forcible but gentle wrenching, close the puncture in the usual way, and enclose the foot, protected by a domett or cotton-wool bandage, in plaster of Paris. The foot is placed in the best position obtainable, and thus left for ten days or a fortnight, when the plaster is removed, and the cure completed by massage, passive movements, etc. He has treated a considerable number of cases in this way in the orthopædic department of St. Bartholomew's Hospital, and up to the present there has been no instance of failure of union of the divided tendon. A firm piece of tendon, equal in size to the tendon above and below, has always been formed between the divided ends, which have been separated as much as from three-quarters of an inch to an inch or more. The advantages of the method are (1) the great saving of time; and (2) the doing away with the necessity of expensive extension apparatus.

Vincent Jackson (*Lancet*, June 16th, 1888, p. 1220) considers the "immediate method" is on all grounds the most satisfactory, the quickest, the least anxious, as well as the cheapest procedure hitherto employed. He is inclined to say that no previous plan is comparable with it. In a case of talipes varus he divides the tendons of the two tibials, and tendo Achillis if necessary, and all resisting bands wherever found on the plantar surface of the foot, bandages the limb with a flannel roller from toes to knee, rectifies the deformity by manipulation, lays the foot and limb in a tin splint, secured by strips of strapping plaster, and covers the whole with plaster of Paris.

Wright, G. A. (*Lancet*, June 30th, 1888, p. 1319) advocates Barwell's method of treating club-foot by means of the so-called "artificial muscle," i.e. the application of elastic tension applied by elastic straps, bands, and strings (Barwell "On the Cure of Club-Foot without cutting Tendons.") He believes that if this method is applied immediately after birth, tenotomy, syndesmotomy, and tarsectomy will be seldom required.

Sands (*New York Med. Jour.*, Feb. 11th, 1888, p. 158) showed at the New York Surgical Society a child of twelve with congenital club-foot, in whom he had excised part of the os calcis, the cuboid, the external cuneiform, with a portion of the internal and middle cuneiform bones, and a large portion of the scaphoid. Also a second case of congenital club-foot, in which he had excised the astragalus with portions of the os calcis, cuboid, and external malleolus. In the first case there still remained some slight equinus, which it was considered would have been overcome by removal of the astragalus. In the course of a discussion, Dr. C. T. Poore stated that he had removed a V-shaped piece from the tarsus on five occasions with very good results. Dr. Stimson had taken away the astragalus in two cases—in one with good motion subsequently. Dr. Wyeth had removed a wedge-shaped piece twice, sawing through the head of the astragalus, and also removing a little of the scaphoid, the results being better than he had expected. Dr. Sands said he had once removed in a paralytic case the head and neck of the astragalus, with complete rectification of the deformity. He remarked that no two cases were exactly alike. The surgeon could never tell before the operation how much bone he would be obliged to remove. Dr. Wyeth believed it was better to deal with the tarsus as if it were a single bone, excising sufficient to overcome all resistance to reposition.

Kapteyn (*Weekblad von het Nederlandsch tijdschrift voo geneeskunde*, No. 14, October, 1887, p. 363) gives his experience on three cases of congenital club-foot on both sides, treated by Phelps's method of open incision (for a description of which see "Year-Book" for 1888, p. 172, and for 1887, p. 153). One was a child ten and a half months old. A week after the performance of subcutaneous tenotomy of the tendo Achillis, the operation was done in both feet at one sitting. The wounds were quite healed in four weeks. In the second case the child, who was thirteen years old, walked entirely on the back of the foot. Dr. Kapteyn was obliged to cut the skin and plantar fascia to the extent of five-sixths of the breadth of the sole. In three months the wound had healed, and the position of the foot was good. The third case

was a child of three, who walked on the outer malleolus and back of the foot. In the right foot a strong supination of the calcaneus remained, so that in this case a half-circular incision round the inner malleolus was necessary. By this procedure the whole deltoid ligament was severed, the supination was then easily overcome, and the foot forced into its right position. Six weeks afterwards the wound closed with a perfect result.

Levy, Sigfred (*Centralblatt für Orthopædische Chirurgie*, May, 1888, p. 129) relates nine cases of severe club-foot treated by Phelps's open incision. The children varied in age from two and a half years to eleven and a half. In all the result was good. One case, in which he obtained a cure in three months, was so severe, that he concludes the most serious deformities can be successfully dealt with in this way; and that resections of the tarsal bones can under no circumstances be required.

In this conclusion I cannot concur. There are inveterate cases in which the rectification of a foot is prevented by the deformity of the bones, and in which, when all the soft parts have been divided, a restoration to the normal position in consequence of this is still impossible. All surgeons who have much experience in this department of practice must have met with such cases. I have had several under my own care, and have seen others under the care of colleagues.

Lund, Parker, Ogston, Whitson, Buchanan, Noble Smith, and Symonds (*Brit. Med. Journ.*, Oct. 27, 1888). In the discussion on the operative treatment of club-foot at the last meeting of the British Medical Association, August, 1888, **Mr. Lund** showed a patient on whom he had operated sixteen years previously. He had removed both astragali, and the patient, who was now grown up to manhood, was able to walk well without any perceptible deformity. **Mr. Parker**, beyond manipulation and the application of a flexible metal splint, does not recommend the commencement of purely surgical measures, even in severe cases, before the child is between three and four years old. He always give an anæsthetic, and applies an Esmarch's bandage, and does all the cutting that may be necessary at once rather than in stages. He thinks that the surgeon can never quite know what structures will need division until after section of the tendo Achillis. He then prefers dividing any rigid ligaments to wasting time in stretching them. As a rule, the only tendon divided is the Achillis. If, however, the tibials require section, this is done simultaneously with the ligaments, and near their insertion, where they blend with the capsular ligaments, connecting the head of the astragalus with the scaphoid and other bones in front of it. He then rectifies

the position of the foot as much as possible, and invariably uses plaster of Paris. He entirely disapproves of tarsectomy in any form in infants and young children, on the ground that it is altogether unnecessary. In a subject over fifteen he thinks it may be entertained as an exceptional measure, but not even then until open syndesmotomy (*Phelps's operation*) has been tried. Where there is a tendency for the whole limb to turn inwards, he recommends Macewen's osteotomy of the femur. Where there is much redundant skin on the outer side of the foot, he removes it in the shape of elliptical flaps. Prof. Ogston, for slight cases, when seen early, employs forcible rectification and repeated applications of rigid bandages. For older and severer cases he has abandoned linear osteotomy of the tarsus after having done it five times. Cuneiform exsection he has done three times, and is disappointed with the result. Lund's operation of removal of the astragalus he has done five times. He found it remarkably easy and rapid, and considers it, when combined with division of the tendo Achillis, incomparably superior to other methods. He has also practised osteotomy of the tibia and fibula just above the ankle joint, rectifying the foot immediately afterwards, in ten cases in which the deformity was less severe than in those on which he did a 'Lund.' They were all attended with satisfactory results. A description of the operation will be found in detail in the *British Medical Journal* for October, 1888, p. 924. Mr. Whitson considers the only method which holds out any hope of permanent benefit for patients after the second or third year of life is excision of a portion of the tarsus; but this, he says, is only the first step, the foundation stone, as it were, of a cure. Careful after-treatment for eighteen months or longer is necessary to complete it. In cases of four years or upwards, nothing short of excision of the astragalus, he believes, will suffice, the deformity being so great that a cure cannot be effected in any other way. Prof. Buchanan divides cases of club-foot into three classes: (1) minor degrees in young children, depending on shortening and rigidity of tendons, fasciæ, and ligaments. For such, manual rectification and retaining apparatus suffice. (2) Severer degrees, in which the abnormal position of the bones is maintained by so much rigidity of the soft parts as renders reduction by the hand practically impossible. For such, he divides the tendo Achillis, but never the tibialis posticus, behind the ankle; and then, introducing the knife subcutaneously at the inner edge of the foot opposite the tubercle of the scaphoid, he passes it superficial to the plantar fascia till the point reaches the middle of the sole. He next cuts vertically through the plantar fascia and the muscles beneath it,

till the point is over the joint, between the astragalus and scaphoid. At this spot the point is made to cut through the tendon of the tibialis posticus just behind the scaphoid, together with the ligaments, thus completely freeing the astragalo-scaphoid joint. The internal plantar nerve and internal plantar artery are divided, but section of neither structure, he says, has ever caused any trouble, although he has done the operation in a large number of cases.

(3) Very severe forms, in which the bones are so altered by the pressure from walking that a part of the tarsus must be excised to allow of reduction. For these he adopts whichever form of tarsectomy appears to be most suitable for the case. He describes a modification of Lund's operation for removing the astragalus. A semi-lunar incision is made below the external malleolus; the peroneus longus and brevis, and the external lateral ligaments, are divided; the foot is then twisted inwards, the inter-osseous ligaments between the astragalus and calcis are severed, and the astragalus is wrenched with lion forceps from its place. For children of tender age, tarsectomy he considers unjustifiable, since he holds that manipulation and subcutaneous section are quite sufficient. Mr. Noble Smith thinks that osteotomy is rarely, if ever, required in children under twelve; for such, he advocates forcible manipulation and plaster of Paris. Mr. Symonds prefers linear tarsotomy with the chain saw to any other procedure, for the following reasons: that it is more simple, and more easily executed; there is practically no deformity left, and it is almost a subcutaneous operation. He operates on the greatest convexity of the tarsus. A knife, to which a chain-saw is attached, is passed through the sole from without inwards, as near the bones as possible. The knife and saw are withdrawn on the inner side of the foot, reinserted at this opening, and carried above the tarsus, beneath the tendons, and passed out at the original incision on the outer side. The knife is detached, leaving the saw encircling the tarsus. He has practised the operation for four years with very satisfactory results.

Monod, Terrillon, Le Dentu, Lucas-Championnière, and Le Fort (*Société de Chirurgie, Bull. et Mem.*, 13, 1887, p. 726). Monod, Terrillon, and Le Dentu relate successful cases of excision of the astragalus. Lucas-Championnière has also removed the astragalus, but thinks that the surgeon can never exactly know till the operation how much bone he will have to remove. Le Fort considers that tarsectomy is not justifiable in the majority of cases.

Many other successful cases of excision of the astragalus have been published during the current year. The above abstracts, taken from English, Amercian, and French sources, serve to show the

opinion of the leading surgeons on this operation. It is certainly an excellent one, and in those cases in which the rectification of the foot by milder means is rendered impossible by reason of the bony deformity of the astragalus itself or of the malleoli, is, in the opinion of the Reporter, the best operation at present devised.

Beely (*Centralblatt für Orthopädische Chirurgie*, August, 1888, p. 201) describes a new splint for club-foot. It consists of a tin trough for the outer part of the thigh, a similar but longer tin trough for the outer part of the leg, and a flat sole-plate with two tongue-like projections bent at right angles to it on its inner side. These parts are connected together by a bendable outside iron. The splint is intended to take the place of a plaster of Paris bandage. It can be bent to the position to which the foot has been brought by manual rectification, and thus serves to retain it in this position. Beely prefers it to plaster, in that it can be removed once or twice a day to allow of massage and passive motions, and for the maintenance of cleanliness. It is not intended to rectify the deformity, but only to hold it in the rectified position after manual redressment. It forms, moreover, a cheap and useful night-shoe for preventing a return of the deformity after the latter has been overcome by other means.

2. Hammer-toe.

At a meeting of the Medical Society, held March 19 (*Lancet*, March 24, 1888, p. 575), on a discussion on hammer-toe, Mr. Adams stated that he divides the lateral ligaments subcutaneously, and then places the toe in a metal splint for three or four weeks. Where this method fails, he thinks excision of the head of the first phalanx, as suggested by Mr. Anderson, should be performed in place of amputation, which has generally been done in severe cases. Mr. Anderson supported his method by the argument that it involves less after-treatment, and guards against a relapse. Mr. Walsham considered, as the result of dissection, that the contraction consisted in a shortening of the glenoid ligament as well as the lateral. He practised subcutaneous section of the glenoid ligament, and found, as after-treatment, that a simple dressing with plaster of Paris sufficed. In less severe cases, mere stretching the toe under an anæsthetic, whereby the contracted ligament is ruptured, he had found efficacious.

3. Knock-knee.

Ellis, T. S. (*Brit. Med. Journ.*, vol. i. p. 7377, 1888) advocates a similar system of exercises for the cure of knock-knee to those he has done so much to make known and popular in the treatment of flat-foot. Starting from the proposition that the muscles concerned in raising the body to the full height, and those which

draw down the pelvis in opposition to resistance from above, pull the knee towards a straight line between the foot and the pelvis, *i.e.* outwards, he argues that, as failure of muscular support leads to yielding of ligaments and altered bony surfaces of the joints, so does vigorous action of muscles which make them strong and taut not only relax and renew the overstretched ligaments, but also, by exerting constant pressure on the bony surfaces of the joints, remodel their altered contour. In actual practice he says he has found the treatment thus indicated to be highly satisfactory; so much so as to justify a confident opinion that it would be found to be sufficient even in the worst cases. Supports he considers wrong in principle, and unnecessary in practice. Tenotomies he condemns, and osteotomies and resections are regarded by him as unwarrantable mutilations. He recommends tip-toe exercises as advised for flat-foot. One of these may be carried out by raising a weight by means of a cord running over pulleys, the object being to bring the foot to extreme tip-toe, the knee and hip to full extension; and then, after a pause, to suddenly and vigorously draw downwards. Another consists in turning a wheel, placed so high that the handle is with difficulty reached when it is at the highest part of the circle.

The value of Mr. Ellis's tip-toe exercises in flat-foot is undoubted. In slight cases of knock-knee they also appear well worth a trial. For advanced cases of knock-knee, however, I do not think much can be expected from muscular exercises; and for such a well-planned osteotomy appears to hold out the best method of a speedy and complete cure.

Stoerer (*Centralblatt für Orthopædische Chirurgie*, May, 1888, p. 44) describes an instrument for the treatment of knock-knee and other deformities of the bones of the lower extremity. It differs from the usual leg-irons in that it aims at removing the weight of the body from off the deformed limb by taking its bearings from the tuber ischii. It thus may be said to combine the leg-irons in common use with a Thomas's knee-splint. It is intended, therefore, to overcome not only the resistance which the deformity in itself offers, it also seeks to overcome the unfavourable influence of the weight of the body, which, as in knock-knee, tends to increase the deformity. The apparatus, measured from the tuber ischii, must be one or two centimetres longer than the leg, so that the support touches the ground while the leg is in a hanging position. It consists of two ordinary leg-irons, with joints at the ankle and knee. The side-irons are connected above by a cross-piece posteriorly shaped and padded so as to fit comfortably to the tuberosity of the ischium, after the

fashion of the back of the ring in Thomas's splint. In front the irons are secured to the thigh by an ordinary lacing circlet. The lower portions are provided with a calf-circlet. The sole of the boot, which is connected in the ordinary way to the lower end of the side-irons, touches the ground, but there must be sufficient room in the boot to allow the foot to remain suspended one centimetre from the sole. The sole of the opposite boot is raised. A knee-cap is provided for making lateral traction on the joint, and overcoming the inward displacement.

Davy (*Lancet*, vol. i. 1888, 870) gives his experience of 42 cases of Ogston's operation for genu valgum. The oldest patient was thirty, the youngest two. He employs a tenotome with a groove on the back, along which he slides the saw, thus facilitating its entrance into the knee-joint. He makes the wound valvular, closes it after the operation with collodion, and places the limb at rest for three weeks in a gum and-chalk splint. He thinks antiseptics unnecessary. All his patients recovered; but one had a stiff knee, and one a dislocation of the patella inwards from the loss of internal condylar support.

By the majority of surgeons, as well as by Professor Ogston himself, this operation has been abandoned for Macewen's. The objections to it are that the knee-joint is opened, and that supuration of the joint, caries of the bones, ulceration of the cartilages, and stiff-joint are apt to follow. I have seen all of these happen, and even a fatal result, when the operation was practised in former years at St. Bartholomew's, notwithstanding the use of antiseptics.

4. Osteoclasy in deformities of the lower extremities.

Dillon Brown (*New York Med. Record*, Dec. 3, 1887, p. 704) in an article on osteoclasy, states that Nussbaum has collected 242 osteotomies with 10 deaths, and 204 osteoclasies without a single death; and that Poore, moreover, has found that in 1,510 cases of osteotomy death occurred in 20 cases, suppuration in 109, and necrosis in 17.

For rickety tibiae, in which the bones become eburnated and require operative interference, Dillon Brown practises osteoclasy in preference to osteotomy. In thirty experiments on the cadaver, the fracture was, in all, opposite the pressure-pad of the instrument, and practically transverse. In one case only was there any comminution. He prefers Cabot's modification of Rizzoli's osteoclast, in which counter-pressure is obtained by hooks instead of rings, as these allow the leg if impacted to be more easily removed. The instrument consists of a steel bar; through its

centre is fitted a heavy screw, one end of which is furnished with a handle and the other with a strong well-padded plate. It is completed by two steel hooks, having at their upper portion a slot into which the large bar slides. With the patient anaesthetised, the leg is put in the hooks, which are so adjusted on the straight bar that one comes just below the upper, and the other just above the lower epiphysis of the tibia. The padded steel plate should be on the outer aspect of the leg, and directly over the point of desired fracture. The deformity must be slightly over-corrected, and bandaged in that position from the toes to the upper part of the thigh. The after-treatment is that of any simple fracture of the leg. The bandage should be removed at the end of six weeks, but some light splint kept on for a month or two longer. The operation is seldom followed by pain or constitutional disturbance. The only accident liable to occur is a separation of the epiphysis, and this can always be prevented by a proper adjustment of the instrument. Two cases of non-union have been reported. Sharp curves near the joint, where Cabot's modification of Rizzoli's instrument cannot be used, are better corrected by Robin's osteoclast or by osteotomy. He gives eight cases of osteoclasts for bow legs occurring in his own practice. No accident followed the operation, and the result, both immediate and ultimate, was excellent. There has been no return of the deformity, although the patients were allowed to run about six weeks after the operation without mechanical support. Osteoclasy for knock-knee by Collin's method, which aims at separation of the epiphysis and diathesis at the lower end of the femur, he considers dangerous and unsurgical; whilst, on the other hand, he thinks that Robin's method, which has for its object fracture of the femur just above the epiphysis, is destined to supplant osteotomy. Robin's instrument gives perfect control over the desired point of fracture. It does not appear from the paper that Dillon Brown has had any experience of osteoclasy for knock-knee. Osteoclasy has been used, in addition to rickety deformities of the tibiae and knock-knee, in badly-united fractures, articular deformities resulting from bony ankylosis, deformities following old dislocations, and certain obstinate forms of club-foot. It is not advisable for bony ankylosis of the joints. Louvrier reports twenty-six cases of flexed knee treated in this manner. Besides encountering many mishaps, he had two cases of death, and a case of gangrene of the leg, following rupture of the popliteal artery. Dr. Morton, of Philadelphia, and Bradford, of Boston, have invented instruments for osteoclasy in obstinate cases of congenital equino-varus. The latter surgeon requests

fifteen cases, and thinks the method saves time and trouble, and gives perfect results. Osteoclasis is to be preferred in all cases of deformity near the middle of bones, and in a large proportion of cases of knock-knee and other deformities near joints, but only rarely in cases of bony ankylosis and club-foot.

Ferrari (*Centralblatt für Orthopædische Chirurgie*, January, 1880, p. 7) describes a new form of osteoclast. It is a modification of Collin's instrument, and, as in it, the force is applied laterally and to the outside of the limb; it differs in that the force is exerted by a screw instead of a lever. A detailed description of the apparatus can hardly be understood without reference to a diagram. It is exceedingly simple both in construction and application, and is said to answer its purpose admirably. Thus the fracture can always be located at the spot desired, is always subperiosteal, and often perfectly transverse, whilst the fragments are even. It is intended for producing subcutaneous supra-condyloid fracture of the femur in genu valgum, but Ferrari does not say that he has used it, except on the cadaver.

5. The treatment of rickety deformities of the lower extremities.

Owen (*Practitioner*, 1888) writes in favour of Delore's operation of *redressement forcé* in the treatment of knock-knee, bent tibiae, etc., when gentle methods of treatment are not available, and advocates the saw in preference to the osteotome when the bones are too solid to yield to the bloodless treatment.

Dillon Brown (*New York Med. Rec.*, December 3, 1887, p. 704), however, thinks for bow-legs manual osteoclasis can be practised in only a limited number of cases. The operation takes from 5 to 30 minutes, and is not suitable for children over 12. The leg must be subsequently kept quiet for from 3 to 6 months and then crutches used for a year. For correcting genu valgum, Dillon Brown considers that Delore's operation is anything but a safe one; the bone-lesions are serious, the joints are left weak and lax, and there is a risk of short-leg. Experiments, moreover, on cadavers show that it is a rough and unsurgical procedure and certain to be supplanted by the more precise method of instrumental osteoclasis or osteotomy.

6. Correction of false ankylosis at the knee.

Gibney (*New York Med. Journ.*, June 30, 1888, p. 711). A stocking is first applied with padding over the patella; then the limb is covered with a plaster of Paris bandage from the lower third of the leg to the upper fourth of the thigh, the ligamentum patellæ being left uncovered. A Billroth's jointed splint is next adjusted and covered with a plaster bandage. While the plaster is

setting a transverse cut is made across the popliteal space down to the stocking; an elliptical space is also made over the ligamentum patellæ. On the following day the leg is extended as much as possible, and a wedge of cork inserted between the edges of the opening in the popliteal region. This manipulation is repeated from time to time, and in a few weeks, with a single dressing, from fifteen to fifty degrees of motion can be gained. For children, two or three weeks suffice.

7. A new method of overcoming adduction at the hip.

Taylor (*New York Med. Journ.*, November 19, 1887, p. 569). The apparatus consists of a splint which is applied to the inside of the leg, and which ends above in a properly-shaped crutch bearing on the opposite ischial fold. The abducting force is applied by means of a screw a little below the crutch, and is said to be well-nigh irresistible, easily borne, and perfectly under control. The apparatus is worn in bed, and a few days to a few weeks is enough to overcome adduction even in obstinate cases. It is useful for nearly all cases of adduction of the hip except for bony ankylosis.

8. A new method of extension in hip-joint disease.

Tubby (*Lancet*, August 18, 1888, p. 312) recommends in hip-joint disease, where there is flexion and abduction, a combination of Marsh's and Volkmann's method, *i.e.* to place the affected part on an inclined plane at such an angle that the lumbar spine is in complete contact with the bed, and then to apply a weight to each limb, but that on the sound side should be three or four pounds heavier than that on the diseased side.

9. The treatment of infantile paralysis.

Walsham (*Lancet*, June 28th, 1888, p. 158) has invented a new instrument for the treatment of infantile paralysis involving the extensor muscles of the knee. The instrument is so contrived that when the hip is either flexed or extended by its flexor or extensor muscles, the knee, by means of side levers working on a joint in the leg-iron at the knee, is also flexed and extended to a like degree. Hence, when the patient sits down and consequently flexes his hip, the knee, by means of the levers, also becomes flexed to the same angle as the hip; and again, in rising from the sitting posture, as the hip is straightened, so by the same means is the knee. As long as the hip is kept extended the joint at the knee is rendered fixed, and a rigid limb is thus provided for supporting the body. The instrument was first applied to a little girl with complete paralysis of the extensors and flexors of the knee on both sides, and more or less paralysis of the left arm.

She had never been able to stand on her feet, but managed to get about on her flexed knees. At the time of the report she could walk on her feet fairly well.

10. Congenital dislocation of the hip.

Thilo (*Centralblatt für Orthopædische Chirurg.*, June, 1888, p. 49) describes a new apparatus for the treatment of congenital dislocation of the hip. It consists of a semicircular copper or brass tube intended to fit over the top of the trochanter major. From this tube two steel uprights are continued upwards to a second curved tube which acts as an axilla-crutch. The steel uprights can be bent by the surgeon to the shape of the body, and by a sliding joint can be lengthened or shortened at will. The trochanter-arch and axilla-crutch are covered with thick felt. This apparatus is sewn on to an ordinary corset made of any strong material, and laced behind and in front. Two thigh-straps must be fixed to the corset to prevent riding upwards. Where the thorax is well developed the axilla-crutch is dispensed with, the lateral rods in this case being made to end in a tin plate, which is sewn firmly to the corset. Dr. Thilo prefers the axilla crutch, however, as by its means the lordosis is better overcome. The apparatus should be worn continuously, the patient never being allowed to stand or walk without it on. Its weight does not exceed $1\frac{3}{4}$ pounds. The metal can be made by any copper-smith under the surgeon's superintendence, and fitted by him to any form of strong corset he may prefer. Dr. Thilo has used it with advantage in several cases. In one, a child of eight, it has been worn for twelve months with much improvement, both in the walk and in the lordosis.

11. Caries of the spine and angular curvature.

Wright (*Lancet*, July 14, 1888). A case under the care of Mr. Wright is reported by Mr. J. Hilton Thompson of caries of the spine in a child aged seven, with angular curvature in which the spine was trephined to relieve pressure on the cord. The disease had existed seven months. There was a marked angular curve in the mid-dorsal region, with lateral thickening and paralysis of the lower limbs. An incision four inches long was made over the most prominent spinous processes. Three laminae and their attached spines were removed and the theca of the cord was found surrounded by a buff-coloured, tough, leathery substance which was cut away with scissors. The cord did not appear to pulsate and no point of constriction could be found. The muscles were brought together by deep catgut sutures. A small drain was left in and the wound dressed with iodoform and boracic acid in equal parts and sublimated wood-wool. The trunk

was supported by a special iron splint. The wound healed almost by the first intention. The patient slightly improved, inasmuch as pin-pricks could be felt as far down as the knees, and both thighs could be slightly flexed. In this condition he remained at the time of the report.

Wyman, of Detroit (*Annual of the Universal Medical Sciences*, vol. iv. p. 374) recommends a periosteo-plastic operation, which consists in dissecting up and suturing the periosteum in such a way as to favour an osseous deposit between the spinous processes. There is thus formed a continuous bony splint uniting the spinous processes of the diseased vertebræ with the healthy ones.

Bradford (*Annual of the Universal Medical Sciences*, vol. iv. p. 378) has had five successful cases of Pott's disease treated by Koenig's operation of cutting down and removing caseous matter and fragments of sequestra.

Krohne and Seseman (*Lancet*, June 28, 1888, p. 168) have adapted the well-known double Thomas's hip-splint to the treatment of caries of the spine by adding a pelvic band, a support for the shoulders, neck, and head, and two sliding foot-pieces. The two upright bars, which are prolonged to the head-support, are made after the shape of a healthy normally-formed child when in the recumbent position, and give posterior support to both sides of the spine. Two cross-bars support the body just below the axillæ and the pelvis respectively. The extremities are kept in position by the usual bendable cross-bars or circlets for the thigh and leg. The splint is placed next the skin so that the child can perform its natural functions without the removal of the apparatus. By its means the weight of the head and upper extremities is taken off the spine, and the spine is firmly fixed by placing a wide bandage round the body and the splint. By fixing the legs they are prevented from being drawn upward and jerking the spine. In applying the splint care should be taken that the fold of the buttock corresponds to the angle of the splint. If there is contraction at the hip-joint as well the splint is still applicable, the angle under the knee being filled with soft padding, which is gradually removed as the limb drops by its own weight to the straight line of the splint. The child should be placed on a feather-bed.

I have used this splint in a considerable number of cases, and have come to consider it one of the most valuable means at our disposal for the treatment of caries of the spine in children. Not only does it supply the place of a plaster of Paris or felt corset, but, by fixing the legs, it prevents the psoas muscle from dragging on the spine. The child can be lifted by the cross-bars as one

stiff piece, and may thus be carried about, from bed to couch, etc., and placed obliquely in a reclining position.

12. The treatment of spinal abscess.

Laffan (*Brit. Med. Journ.*, vol. i. p. 130, 1888) recommends cutting down on diseased vertebræ as soon as the diagnosis of caries has been made, and maintaining a direct opening with the diseased bodies. This he advocates in the dorsal as well as in the lumbar regions. He thinks that if no disease be discovered, no possible mischief could ensue.

This practice appears to me to be highly objectionable in the dorsal region, as it would endanger the opening of the pleura.

Watson Cheyne (*Brit. Med. Journ.*, vol. i. p. 1061, 1888) recommends the injection of spinal abscesses before opening them with iodoform and glycerine, or with iodoform dissolved in ether. This failing, he advises opening as early as possible; psoas abscesses should be opened in the lumbar region or near the anterior inferior spine; retropharyngeal abscesses at the upper and posterior part of the sterno-mastoid—*i.e.* in each case as far from the sources of contamination as possible. As much of the abscess-wall should be removed as is practicable, and what remains touched with undiluted carbolic acid. He considers the old carbolic dressings for these abscesses the best, but condemns the injection of irritating antiseptic solutions. The patient should be kept in bed in the recumbent position, not allowed to sit up, and should wear some light apparatus to prevent lateral movement.

13. The treatment of lateral curvature.

Staffel's treatment (*Centralblatt für Orthopædische Chirurgie*, Feb., 1888, p. 49) consists in exercises, practised twice daily, followed by from one to two hours' rest on an inclined plane, combined with head extension and laterally applied pressure to the projecting ribs. During the rest of the day an apparatus is worn. The exercises have for their object the strengthening of the muscles generally and the correction of the deformity.

Lorenz (*Centralblatt für Orthopædische Chirurgie*, Aug., 1888) describes a new couch for the correction of lateral deformity. It consists of a quadrangular wooden frame corresponding in length to the height of the patient, and composed of four essential parts:—(1) The *leg portion*, which is an upholstered flap corresponding to the length of the patient's lower extremities; it is jointed at its proximal end to the frame, so that it can be raised or lowered at will. (2) The *pelvis portion*, consisting of a padded frame for fixing the pelvis, and capable of being adjusted to the size of the patient. (3) The *thorax portion*, consisting of an *oblong movable cushion*, intended for the support of the thorax,

and having a projecting ridge on one side to act as a counter-support when the leather shoulder-cap, which is attached to this portion of the couch by two straps, is applied to the patient's opposite shoulder. This cushion is fixed by means of a screw to a cross-bar, which is itself attached on each side to the frame. The upper surface of the cushion lies higher than the floor of the pelvic frame. (4) The *head-portion*, which consists of a firm square cushion, on which several short pillows can be arranged for the support of the head. When in use, the body below the lumbar vertebræ reclines in the side position, being thus fixed by the gripping of the pelvis by the pelvic frame, whilst the upper part of the body lies twisted round from the pelvis, so that the shoulders lie almost flat upon the upper part of the couch.

As the pelvis is lower than the upper part of the body, it follows that the lumbar spine is bent with its convexity to the right, supposing the patient to be lying on her right side. The crest of the ilium and the arch of the lower ribs on the left side are in contact, or nearly so. The left loin is concave, the right convex. The prominent right side of the thorax is supported by the thorax-cushion on which it lies, whilst the left side remains hollow and unsupported. The left shoulder is, further, held backwards by a leather shoulder-cap, which is attached by leather straps to the thorax-cushion. The pressure of the thorax-cushion thus brought to bear on the prominently backward-projecting ribs on the right side tends, Lorenz thinks, to undo the rotation of the vertebræ in the backward direction. The apparatus is at first not well tolerated, but by use the patient can lie in it for several hours during the day, and even sleep in it undisturbed for the whole night.

14. Spinal supports.

Beely (*Centralblatt für Orthopædische Chirurgie*, January, 1888) has improved the corset, which he described in No. 1, 1885, of the above-mentioned journal (also "Year-Book," 1885, p. 157), by reducing the quantity of whalebone, and by prolonging the padded arm-support farther backwards, and fixing it in this position to a second flexible steel side-strip, placed posteriorly to the curved flexible side-steel which forms the essential feature of his corset.

Beely's apparatus is excellent of its kind, although the presence of the arm-supports, a defective method of treatment, detracts from its merit. The tempered springs and straps cause the corset to fit closely, and prevent its upper border from projecting from the body when stooping and so causing an unsightly projection through the clothes.

15. Treatment of wry-neck.

Page (*Brit. Med. Journ.*, vol. i. p. 245, 1888) relates a case of spasmodic wry-neck, following injury to the cervical vertebrae, successfully treated by stretching the spinal accessory nerve. The man was twenty-four years old. The wry-neck was the result of two falls, at an interval of three months. The right sterno-mastoid and trapezius were in tonic contraction, and any attempt to straighten caused clonic spasm of the muscles, and also pain. Six months after the first accident, and three months after the second, the nerve was stretched beyond its passage through the sterno-mastoid. A thread was left round the nerve for fear division might be afterwards required. Complete recovery, however, followed, the clonic spasms and pain ceasing first, the tonic slowly yielding subsequently. The thread was withdrawn from the wound on the tenth day.

Pye-Smith (*Brit. Med. Journ.*, vol. i. p. 252, 1888) shewed a man, aged thirty-nine, at the Sheffield Chirurgical Society, in whom he had divided the right spinal accessory nerve for severe convulsive wry-neck. The convulsions almost entirely ceased; but the sterno-mastoid and trapezius muscles remained much wasted.

These cases illustrate the superiority of stretching over nerve section. In the former operation the nerve supply of the affected muscle, though in some unknown way favourably influenced, inasmuch as the spasms cease after it, is not detrimentally interfered with, and no wasting or loss of function in the muscle ensues; whereas, after division of the nerve, the muscle, unless the nerve unites (when the operation may be said to fail), undergoes degeneration.

Eiselberg (*Deutsche Med. Zeitung*, No. 14, 1888, p. 173). In a case of wry-neck of traumatic origin, Eiselberg succeeded in rectifying the deformity by the open division of the sterno-mastoid after subcutaneous division had failed. The only after-treatment employed was a plaster of Paris bandage.

Robinson (*Lancet*, vol. i. p. 631, 1888) describes a new form of wry-neck apparatus, consisting of a head-piece, a chest-piece, and elastic accumulators. The latter are so arranged that elastic tension is applied in a direction opposite to that of the lesion.

SURGICAL DISEASES OF CHILDREN.

BY EDMUND OWEN, M.B., F.R.C.S.,

Senior Surgeon to the Hospital for Sick Children, Great Ormond Street, and Surgeon to St. Mary's Hospital, London.

1. The treatment of calculous boys is still being quietly worked out, with the result, so far as one can see, of the perineal operation being relegated to a place in ancient history; for, with rare exceptions, only two operations are now practised—suprapubic lithotomy, and crushing with evacuation at a single sitting. And there can be little doubt that stones are still removed by the knife which would readily yield to a small lithotrite and evacuator.

Surgeon-Major Keegan has recently published a table of 114 litholapaxy operations performed upon boys at the Indore Charitable Hospital, Central India, up to June, 1888.—The youngest child operated upon was under two years, and there were fourteen others under three. Of part of this long series we have already heard from Dr. Keegan, but the remainder (from March, 1887, to June, 1888) are tabulated and explained in the *Indian Med. Gaz.* for Aug., Sept., and Oct., 1888, and deserve all attention and consideration. In a note to the Reviewer, Dr. Keegan says, referring to the table:—"A glance at it will show that litholapaxy is capable of dealing successfully with very hard and large stones in boys, and you will perceive that a good number of stones have been crushed by means of a No 6 lithotrite—i.e. a lithotrite 5 in the stem and 6 in the angle. Since printing this table I have heard from Dr. Freyer that he has disposed of a very large stone, weighing over 700 grains, in a boy aged nine, by litholapaxy, and that he did so by means of a fully-fenestrated No. 8 lithotrite. The operation lasted two hours, but the boy was practically well a few days after the operation." No doubt we shall have full particulars of Dr. Freyer's important case later on, and it is sincerely to be hoped that this and Dr. Keegan's work will induce European surgeons to treat more

boys by the simple operation of lithotrity, and save them from the perils of suprapubic lithotomy.

These are the percentages of Dr. Keegan's 114 operations :—

Average age of boys operated on	...	...	...	...	6.26 years.
" weight of stone removed	...	...	...	...	95.05 grains.
" number of days spent in hospital after operation	...	...	...	...	5.70 days.
Mortality following operation	...	...	...	...	3.5

2. Phimosis and preputial adhesions.

Lewis A. Sayre, M.D. (*Trans. of Internat. Med. Congress*, 1887).

In this paper Professor Sayre once more calls attention to the fact that want of co-ordinating power, paralysis, and obscure nervous affections of various kinds, may be due entirely to the presence of a long and narrow or adherent prepuce.

"There are some cases of very anomalous and extraordinary nervous manifestations entirely dependent upon irritation of the genital organs, in which an operation is absolutely demanded; in many instances the relief from all the strange symptoms has not only been immediate, but permanent, after the operation, without any other medical or surgical treatment."

In urging a thorough uncovering of the glans, he says that unless there is a great redundancy of the prepuce, with constriction of the elongation, there is no occasion to remove any of the tissue;—"the object to be obtained can be easily accomplished by running a director into the orifice of the prepuce, gliding it between it and the glans, and pressing it as far back as possible. Then glide into the groove a pointed bistoury, and divide the contracted tissue sufficiently to enable you to tear it back and uncover the glans; then a slight nick with the scissors or bistoury, through the thickened fold of the edge of the frænum; after which you can easily tear down the frænum and adhesions so as to expose the entire glans, and in the sulcus behind the corona will often be found a hardened smegma, sometimes containing chalky concretions, which have been one of the sources of the irritation."

He then gives a series of reports, most of which are in extremely graphic language. One is that of "a child two years of age, whose gait simulated that of locomotor ataxia, being uncertain, precipitate, irregular, and jerking. There was no paralysis of any muscles; but the trouble seemed to be due to defective co-ordinating power over the muscles. On the second day after removing a contracted and adherent prepuce, the trouble had entirely disappeared, and I found my little patient running about the room."

"Mr. John Maguire and wife, of our town, have but one child, a boy of fourteen months, who has been the terror of all that part of town for six months, as he cried constantly, except when asleep or nursed by his mother. He would lie perfectly still and squall, not showing any disposition to sit up, nor did he like to be raised up. He was very nervous, and would have times when his limbs would be rigid." And so on. Circumcision was performed, and the child made a rapid and complete recovery.

Dr. W. R. McMahon, of Indiana, reported to the Professor "two cases of epilepsy caused by congenital phimosis," which he had "entirely relieved by operation."

Charcot, speaking of urinary paraplegia, says: "The very number of the cases in which we see paraplegia appear in the course of disease of the urinary passages is, of itself, enough to show that the phenomenon is no chance coincidence."

Dr. Willard, of Philadelphia, also urged the necessity of securing a freely movable prepuce in all cases of nervous symptoms and in co-ordination; and Dr. Love, of St. Louis, stated that for many years it had been his practice in such cases to perform circumcision.

3. Circumcision.

The operation recommended for phimosis in the foregoing report was that of making a dorsal incision in the prepuce. To this, however, a double objection may be urged. The result of the procedure is often extremely unsightly, a large pendulous mass of prepuce hanging down on either side of the glans. I have known of an instance in which the parents deemed it inexpedient to send back a boy to school on account of such disfigurement. The second objection is that, when the prepuce is long and thick, and the glans small, the surgeon is apt to pass the director into the meatus, and then with his bistoury to slit the glans as well as the foreskin.

4. Enuresis cured by circumcision.

Charles O'Farrell, L.R.C.P. (*Lancet*, July 21, 1888).—A healthy boy of eleven had wetted the bed almost every night of his life. Every method of treatment had been tried in vain by various medical men—coercion, conciliation, dieting, and drugging. His prepuce, which was long, but could be easily retracted, was removed, and the boy ceased to wet the bed.

"I am induced to bring this happy result before the profession, as I am under the impression that it is a remedy not very often tried, and one that under ordinary circumstances can have no bad results, even supposing that it does not succeed. There is no mutilation or disfigurement; and other evils may be prevented,

such as masturbation—one of the inducements for the operation I held out to the wavering parents.”

The treatment which Dr. O'Farrell recommends, though speculative in a degree, is based upon scientific principles. It is the removal of peripheral irritation, which may perchance be causing central disturbance.

Further comment on these notices is superfluous. When Sayre writes, he who runs may read. Certainly the reports are worthy of the attention of every class of practitioners.

Dr. de Saint-Germain, of the Children's Hospital, Paris, has (*Trans. Internat. Med. Cong.*, 1887) urged preputial dilatation as a substitute for circumcision.

“Since circumcision is sometimes followed by accidents, such as hæmorrhage, partial gangrene, diphtheria of the wound, I have almost entirely given it up, and reserve it for those cases in which dilatation is impracticable (these cases are in the proportion of 1 in 300). This operation consists in the introduction into the preputial orifice of a dilator of two branches, and in the gradual and slow dilatation of the orifice. The operation is completed by separating the adhesions by the aid of a grooved director, and by daily movement of the prepuce, by which the glans is alternately uncovered and covered.”

The daily drawing to and fro of a prepuce swollen and tender, on account of the forcible dilatation to which it has been subjected, is likely to distress the child, and to be objected to by the mother and the nurse. And I venture to maintain that, except for slight cases, the old-fashioned operation of circumcision, if properly performed, leaves nothing to be desired. Once done, the trouble is at an end; whereas the “dilated” prepuce must be watched, lest contraction recur.

5. Inoculation of disease in circumcision.

The publication of a group of cases last year by Mr. Hutchinson (*Syphilis*, p. 115), in which syphilis was inoculated by the use of infected instruments, attracted considerable attention.

Mr. Eve (*Lancet*, Jan. 28, 1888) now ascribes an attack of tuberculosis to infection during ritual circumcision.

“A Jewish child, aged five months, was admitted with a large, globular, fluctuating swelling in each groin. On the under surface of the penis, at the site of the frænum, was a small superficial sore. The abscesses were opened, and their walls scraped. The child improved, and in fourteen days left the hospital with a sinus in each groin, discharging only a small amount of pus. He had been circumcised when eight days old.”

I took some of the caseous material and inserted it beneath

the skin of a guinea-pig. The neighbouring glands soon became enlarged, and, on killing the animal in ten weeks, I found intense general tuberculosis of the lungs, liver, and spleen."

"One person who performed the operation had died the previous week from consumption. He had not applied his lips to the wound, but after removing the prepuce he ejected some wine from his mouth over it."

"Attention having only comparatively recently been directed to this subject, doubtless many other instances of the transmission of both diseases have been overlooked. But in view of the facts which are now to hand, it is surely time that steps should be taken among Jewish communities to obviate the recurrence of similar catastrophes."

6. Excision of the hip-joint in tubercular disease was thoroughly dealt with by Mr. Barker, in the last of his course of lectures delivered in June, 1888, at the *Royal College of Surgeons*. He is strongly opposed to the posterior, and to the external incision, and for the last five or six years has operated entirely by the method of Hueter, attacking the joint from the front, between the tensor fasciæ femoris and the glutei on the outer side and the sartorius and rectus on the inner. The incision is begun just below the anterior superior iliac spine, and runs straight downwards and inwards for three or four inches. The lower inch or so should divide only the skin; the upper two-thirds should reach the neck of the femur at once. In this way the capsule is laid open vertically, and this opening can be enlarged by a little further dissection with the knife, care being taken, however, that the Y ligament is left as far as possible intact. The state of the joint having been now ascertained with the point of the index-finger, a narrow-bladed saw is introduced along the latter and the neck of the femur is divided from above downwards. Then the head is extracted with a sequestrum forceps, and the acetabulum, if diseased, is carefully gouged out clean, or scraped thoroughly with sharp spoons. Every trace of diseased synovial tissue discoverable is removed with scissors, knife, and sharp spoon, special care being also taken to clear out any caseating abscesses communicating with the joint. All this should be done with as little violence to the tissues around as possible, so that none of the tubercular *débris* shall be forced into the fresh-cut surfaces. When every portion of diseased tissue has been thoroughly removed, the cavity is freely flushed with a germicide solution until all loose particles have been washed away. It is then sponged dry from the bottom, and is immediately dusted with iodoform, which may be carried farther into the ramifications of the cavity on the

end of the finger. A small sponge is then again introduced for the purpose not only of finally drying the part, but also of wiping away any excess of iodoform which may be about. This sponge should be left in until the sutures which close the wound are in position and are ready to be tied. It is then removed, and the threads are knotted, a medium-sized drain-tube being carried down as far as the acetabulum. A thick dressing of salicylic wool, arranged in strips so that interstices are left into which serum can escape, completes the operation.

The patient is much better without a splint of any kind; he simply lies on his back in bed, with the limb fully extended by pulley and weight; indeed, the latter may often be dispensed with altogether. The first dressing may usually remain undisturbed for some days, after which it is well to replace the serum-soaked wool by a fresh dressing of the same kind.

Except for the drain-opening, such wounds heal, as a rule, by first intention. The fluid, moreover, after the first day or so, which comes from the drain-tube, is little more than thick odourless serum. It exudes in very small quantity, and ought never to become truly purulent. This is the reason why the opening, although anterior, is perfectly adequate for the drainage of the cavity left by the operation.

Mr. Barker points out that this operation is not suited for those cases of chronic suppuration with sinuses. Indeed, he affirms that such are best treated by free incision and aseptic drainage; that "they are best left to Nature, and are unsuitable for excision." At first this has the appearance of being a somewhat doubtful compliment to the *vis medicatrix*; and when one finds the sort of cases which Mr. Barker picks out as suitable for his operation, the thought arises that his classification is certainly not marked by magnanimity.

"Remembering that primary osseous disease of this joint is always limited at first to the head or its epiphysary growing line, it ought to be our object to interfere at a very early stage. If this is done, it will never be necessary to undertake those ghastly operations of former days. In the future, if we watch the early development of hip-disease closely, we ought never to find it necessary to remove more than the head and part of the neck of the femur, and, in some cases, the central portion of the acetabulum."

Coming from so thoughtful a teacher and accomplished a surgeon as Mr. Barker, these statements are sure to attract attention, but it is not improbable that they will involve the risk of children with early hip-disease being subjected to operation who

might have made, to say the least, as complete a recovery under the well tried treatment of absolute, continuous, and uninterrupted rest.

Mr. Robert Jones, in the *Liverpool Med. Chirurg. Journ.*, of July, 1888, published an important paper on the value of the treatment of chronic joint disease by prolonged rest, as against that of operation as a routine measure. He affirmed that excision at any stage is a confession of failure, and that surgical triumph is to be found not in the obliteration, but in the restoration of a joint. Showing a group of convalescent children, he remarked—

“Every serious case now recovered at one time possessed joint surfaces fit to adorn the ghastly shelves of our museums. It is the same in all disease. Nature’s recuperative powers are not appreciated. . . . The fear of diathesis is general, and we all feel now and again anxious when a puny, sickly patient prepares to do battle with his diseased joint. At one time the term struma was applied to all these cases, and of late this seems to be supplanted by the Tubercular theory. The terror of this latter term seems to have affected most medical minds, and many seem to think it useless to apply mechanical aid to the local manifestation of a constitutional state. Let it be understood, that, whatever term be used, the condition is curable, and this is vastly more important to all concerned than speculations regarding its morbid anatomy.”

The surgical mind has not generally formulated its creed upon the bearings of the tubercular theory; and, in the meanwhile, the following passage from Mr. Keetley’s address to the West London Med. Chirurg. Society (*Lancet*, Feb. 11, 1888) deserves attention:—

“Excision of soft parts has to be done with great care and thoroughness; but it is not necessary to remove absolutely every vestige of disease in order to effect a cure. In this respect tuberculosis of the joints differs markedly from cancer. As a matter of fact, tuberculosis tends to die a natural death. Time will kill local tuberculosis unassisted by the surgeon. The misfortune is that it is so dilatory in the exercise of its healing powers that very often the patient or his joint, or both, are destroyed before the disease, but, when vigorously helped by the surgeon, time wakes up, as it were.”

I venture to express my own opinion as being in entire accord with that of Mr. Keetley. Tubercular disease we have had always with us; and experience has given ample evidence that with time, care, and rest, affected joints have recovered, and that even though sinuses have formed and have been discharging &c

many months, a perfect range of motion has in some of them been actually secured.

7. Multiple abscesses in infants at the breast.

Dr. Roulland (*Annal. de Gynécologie*, Feb., 1888). Dr. Escheric (*Centralbl. f. Kinderheil.*, No. 2, 1887). A succession of abscesses in the subcutaneous connective tissue, and even in the inter-muscular spaces, is occasionally met with in infants at the breast. It is by no means satisfactory to ascribe them, as Bouchut has done, to the syphilitic or strumous diathesis. In opposition to Dr. Roulland, I am disposed, however, to attach a close connection between them and a chronic form of blood-poisoning, the result, perhaps, of infection at the truncated umbilical cord. Roulland reports the case of an infant who was in a satisfactory condition as regards health and surroundings till he was weaned, when he was attacked with diarrhœa. The abscesses which then appeared subsided with the diarrhœa. A second attack of diarrhœa, after an interval of three months, was followed by more abscesses. He believes that the child was inoculated by absorption of septic material from the bowels.

Escheric is of opinion that the abscesses are due to inoculation of staphylococci, which abound in the liver of all sucklings, colonising in the connective tissues.

The treatment should comprise fresh air and cleanliness, and the prompt incision and washing of each abscess as it forms. I have recently met with an extremely bad case of this disease, evidently of a pyæmic nature, but, with help, the infant successfully struggled through the attack. There was no suspicion of syphilis nor struma, nor had the mother had any puerperal trouble.

8. The treatment of navi by electrolysis.

Mr. John Duncan (*British Medical Journal*, Nov. 3, 1888). Dr. P. Redard (*Trans. Int. Med. Cong.*, 1887). In these two valuable papers much of the old ground is gone over again, and attention once more directed to the fact that vascular tumours readily yield to electrolytic treatment.

In one of Mr. Duncan's cases the growth extended through the thickness of an infant's foot, invading even a metatarsal bone.

"The case was one of those in which the advantages of electrolysis stand out in the clearest manner, because it was really the only available method, was free from danger, and with time and perseverance was absolutely certain of success. The applications were somewhat difficult and uncertain, because the child lived two hundred miles away, but six operations have had this effect: that the tumour has become greatly consolidated, is shrivelled, and is steadily diminishing in size."

"I introduce both electrodes (insulated, of course, so that the operation may be truly subcutaneous), but I work chiefly with the negative pole. It is to be remembered that the effect is produced mainly by shrivelling up and destroying the vascular walls, and that coagulation of the blood is a matter of very secondary importance; therefore, I keep moving the negative pole about, and penetrating as many vessels with it as I can, because its destructive effect is more powerful and diffuse than that of the positive. I maintain it in one place just long enough to bring about a decided effect, and then change to another."

Dr. Redard remarks that it does not seem necessary to him that chloroform be employed; but that he has some feeling for the little patients is evinced in the next sentence, where he remarks that the *séances* must not be prolonged, as the operation is moderately (*moyennement*) painful. The operations may be repeated at intervals of a week.

In England the opinion is general that children have as good a claim to chloroform (or ether) as adults, perhaps even a better claim; and for a *séance* of from "five to eight minutes" an anæsthetic ought certainly to be administered.

Whilst acknowledging in the highest terms the value of the electrolytic treatment of *nævi*, one cannot lose sight of the drawback that for a large growth repeated operations are necessary; for, if too much be undertaken at one time, disastrous sloughing may occur.

When a large *nævus* is situated on a part of the body on which the presence of a certain amount of scar is of little account, no doubt the excision of the mass, with suture of the clean wound, affords the most prompt and certain means of treatment.

9. Excision of scrofulous glands.

W. Knight Treves (*Lancet*, July 21, 1888). Mr. Treves records some cases of this troublesome affection in children as well as in adults, and remarks, "I think it is time that the rank absurdity of treating scrofulous gland swellings with drugs to promote absorption should be exploded. Of course I am not referring to recent gland swellings, which may not contain scrofulous deposit, and which may be resolved."

"These deep glands seldom approach the surface by suppuration. The best that can be hoped for, if they are left alone, is that their contents may undergo calcareous degeneration; meantime they keep the patient in bad health, and may extend, and cause other and more serious complications. I think all diseased glands should be got rid of either by scooping, or the knife, and that the latter has been too much neglected. I may add that I have

excised glandular swellings for many years in the Margate Infirmary without in any instance meeting with a fatal result."

This method of treating scrofulous glands has passed safely through its period of probation, and is now a recognised measure. It is unfortunate, however, that its great value is often overlooked or ignored by the family medical attendant, who generally has sole care of the patients in the earlier stages of the disease, the operating surgeon seeing them only when suppuration has far advanced, the skin being undermined, and a considerable series of glands being matted together, or on the point of forming a diffuse abscess. Provided only that treatment be not too long delayed, the cases are very manageable; and, instead of the child's neck being permanently marked with irregular and hideous scars, a thin white line is all that ultimately remains as evidence of the disease and of its treatment.

In operating, my method of procedure differs somewhat from that of Mr. Treves, for I use the scalpel but little, and work around, and detach the glands, by the use of director and forceps. An important element in the operation is not to keep the incision in the skin too small; it is far better to see what is being done.

10. Removal of foreign bodies from the air-passages.

Dr. Cheadle and Mr. Thos. Smith (*Trans. Soc. Med. Chirurg.*, 1888). Mr. Reginald Harrison (*Brit. Med. Journ.*, June 23, 1888). The daughter of a member of our profession, aged nine years, sucked the loose metal cap of a pencil into her larynx, a desperate attack of suffocation being the immediate result. Four days afterwards the left side of the chest was found smaller than the right, dull, and motionless, the stomach giving resonance up to the level of the left nipple. The trachea was opened, and the sides of the aperture were temporarily stitched to the edges of the skin-wound; the foreign body was seized by slender forceps and extracted.

In Mr. Harrison's case the foreign body, a damson stone which had passed into the trachea of a girl of eight years, was easily removed after tracheotomy. Previous to the operation there were some flattening of the chest and diminished breath-sounds. Both children had had frequent attacks of violent coughing.

Mr. Harrison rightly urges prompt operation in these cases, and a free opening of the trachea; and Mr. Smith gives the useful bit of advice to stitch the edges of the tracheal aperture to the sides of the skin-wound whilst attempts at extraction are being carried out.

Sir William MacCormac (*Lancet*, Feb. 4, 1888) recommends the immediate and thorough closure of the tracheal wound after

extraction of the foreign body. "I am convinced this proceeding materially contributes to the successful issue of the operation, by shutting out the cold air from the lungs and preventing wound-secretions entering the trachea. It will not be always desirable to close the tracheal wound, but in those instances where an operation is performed for the removal of foreign bodies from the air-passages, in some cases of suicidal wound, and generally where the conditions for local repair are favourable, there are obvious advantages to be gained by the immediate suture of the tracheal wound."

11. Removal of a foreign body from the larynx.

M. Labbé (*Congrès Français de Chir.*, March 16, 1888).—A child swallowed a small pointed metallic star, which stuck between the vocal cords, and could not be extracted through the mouth. The thyroid cartilage was therefore laid open in the median line. During the operation the child was nearly asphyxiated. This crisis was relieved by tracheotomy and artificial respiration. The foreign body then came away spontaneously; the voice was restored to the natural condition. This report shows that thyrotomy should not be performed except after a preliminary tracheotomy; and it bears further witness to the fact that separating the lateral halves of the thyroid cartilage need not impair the voice.

12. Cleft-palate.

M. Ehrmann, Mulhouse (*Gazette des Hôpitaux*, March 20, 1888).—Out of a considerable number of operations for cleft-palate, ten were in infants of from four months to two years. Two of these cases ended fatally, six were successes, and two were failures. "M. Trélat has stated that the best age for operating is seven years." M. Ehrmann prefers to operate between two and four years.

Without doubt, the earlier that the cleft is closed the better for the voice of the patient afterwards; but in every case, as Ehrmann remarks, phonic education is needed. Following the practice of Mr. Clutton, I have completely closed at a single operation a cleft of the soft palate in an infant a few months old; the cleft implicated also the hindermost part of the hard palate.

13. Intubation of the larynx.

F. E. Waxham, M.D., gives (*Brit. Med. Journ.*, Sept. 29, 1888) a valuable and fully illustrated account of O'Dwyer's method, which should be carefully examined by every surgeon, even though he be, like the reviewer, indisposed at present to substitute it for tracheotomy in cases of diphtheritic dyspnea. "I have now performed intubation 160 times, with 44 recoveries, or 28 per cent.

I have collected the reports of 1,072 operations performed in various parts of the United States, with 287 recoveries, or 27 per cent."

14. Naso-laryngeal intubation in diphtheria.

J. James Ridge, M.D., B.S. (*Brit. Med. Journ.*, Oct. 13, 1888).

Describing the case of a child of seven years with laryngeal diphtheria, Dr. Ridge says (chloroform having been administered), "I passed a large catheter with open end along the nose and into the larynx. There was at once expectoration of frothy fluid coughed with much violence through the tube, through which, however, air passed freely, as could be felt with the hand, and was shown by placing a flame near the end of the catheter. But in addition to this, it was clear that the presence of the tube in the larynx so distended the glottis that the air could pass outside the tube quite as much as through it, and, when the effects of the chloroform had passed off, the boy could actually speak in a hoarse whisper. The respirations became quieter, and the suffocation was quite prevented." The child died, however, four days later from extension of the false membrane down the trachea.

In another child of three years "nasal-laryngeal intubation with a catheter gave immediate relief, and the next day the child was playing about with the tube in his nose, tied in with a tape round the head. All went well for two days, when the father, very foolishly, and contrary to orders, gave him beef-tea, which evidently passed into the larynx and lungs," and set up a fatal pneumonia.

"The catheters I have procured for future cases are good gum-elastic, silk catheters. I have cut off the eye, and introduce the end farthest from the eye, which is nicely rounded off and smooth, and, of course, without any bone tip. It is slipped along the nostril easily, and the forefinger of one hand guides it into the larynx. I have also procured a smaller long tube of the same material, which slides easily down the lumen of the larger tube, and have made several perforations in the side near one end. This end I propose occasionally to pass down right into the larynx, and then to withdraw the larger tube a little way until the end is out of the larynx. Through the smaller tube I shall then inject a small quantity of solution of peroxide of hydrogen, as a powerful and non-irritating antiseptic, which will thus be brought into actual contact with the interior of the larynx and the false membrane. As the small tube will be in the larynx, it will act as a guide to the larger, which can then be pushed back into its place, after which the small tube will be withdrawn. I hope thus to obviate some of the sources of failure in the above cases."

"I also propose to pass another similar catheter along the other nostril at the same time, but into the œsophagus, so that food may be administered thereby. The tubes will be plainly marked, so that the food may not be accidentally sent into the larynx."

We are sure to hear more of this ingenious and simple method of treatment.

15. Diphtheria.

A. Jacobi, M.D. (*Trans. Philadel. County Med. Soc.*, May 23, 1888).

"Those sick with diphtheria, severe or mild, must be isolated. If possible, the other children ought to be removed from the house. If it be impossible to send the well children away, let them remain outside the house, in the air, as long as feasible, and with open bedroom windows during the night. Their throats must be examined every day, and their rectal temperatures taken. The attendants upon cases of diphtheria must have no intercourse with the well children; though a brief visit of the physician may not render him sick, or dangerous to others, a long exposure affects him or a nurse to a greater or less degree. The best preventive is to keep the mucous membrane in a healthy condition."

Jacobi regards chlorate of potash as a most important remedy, in doses of 15 to 20 grains, and hourly doses of tr. ferri perchl. \mathfrak{m} xv. vel xx. with glycerine. But "when the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly."

As a local application he has found iodol and powdered iodoform of the greatest value. In nasal diphtheria he irrigates the nostrils every hour with mild and warm solutions of corrosive sublimate or carbolic acid, by means of a glass syringe with a short indiarubber tube. The injection should be sent horizontally into the nostril, so as to return by the other nostril or by the mouth.

16. The radical treatment of reducible hernia was one of the subjects discussed at the meeting of the International Congress of Surgery, which took place recently in Paris. Dr. Socin, Basle, spoke highly of its appropriateness and value in children whose herniæ could not be kept up by a truss; he also urged that after the operation no truss ought to be worn. To both of these statements I venture to express entire assent.

Dr. Mollière, Lyons, gave the important advice that the funicular process be well dragged down before the ligature is applied, so that it may be occluded flush with the peritoneal sac. M. Trélat, Paris, while acknowledging the practical value of the operation, remarked that the difficulties and dangers of the

operation must not be overlooked. No doubt there is considerable danger in connection with the operation, but against this must be reckoned the lifelong risks of strangulation and its associations which the patient must run if his hernia be not cured.

As regards the variety of suture employed for blocking the ring, it does not seem to matter ; nor as to whether the peritoneal end of the congenital sac be occluded by torsion or by ligature. In the case of a hernia into the tunica vaginalis, it is not advisable to dissect the sac away from the cord ; in so doing there is a risk of tearing up or damaging the vas deferens, and of interfering with the due development of the testis. As a last word, I would like to advance the proposition that no child with a reducible hernia should be subjected to the risk of a radical operation until a full and fair trial has been made of treatment by trusses.

DISEASES OF THE GENITO-URINARY SYSTEM.

By REGINALD HARRISON, F.R.C.S.,

Surgeon to the Liverpool Royal Infirmary.

1. Urinary fever in relation to operations.

Mr. Reginald Harrison (*Lettsomian Lecture*, No. 1, 1888) discussed this subject with the view of showing that urinary fever was of a traumatic origin, and due to the absorption of urine products. In support of this he stated, that though internal urethrotomy was almost always followed by early symptoms of septic absorption, in a series of cases where after dividing the stricture from within he had also put a drainage-tube into the bladder from the perinaeum, thus preventing urine lying in contact with the freshly-made wound, the usual signs of urethral fever had been avoided. He urged that the main principles of Listerism, viz. drainage and cleanliness, were especially applicable to the treatment of wounds of all kind involving the urethra. Mr. Bruce Clarke (*Harveian Society*, May 17, 1888) has illustrated the practical application of these views in a paper on the value of antiseptic precautions in internal urethrotomy. These precautions are enumerated as: (1) The urethra is rendered as pure as possible by previous irrigation for several days with hot water and corrosive sublimate solution (1 in 2000); (2) Thorough disinfection of the instruments used for the operation; (3) The retention of the catheter, with antiseptic precautions, for twenty-four hours after the operation. In this way rigors and fever were prevented.

As these points have a general application to all wounds involving the urinary apparatus, they are referred to here more particularly in connection with the subject of urinary fever. Careful analysis of the circumstances under which rigors and fever occur after surgical operations, including the use of catheters and bougies, all seem to indicate that these symptoms are directly

caused by the absorption of urine products, and that it is in this direction that treatment is to be applied for their prevention.

2. Drainage of the kidney from the bladder.

Dr. Nathan Bozeman (*Trans. of the Ninth Internat. Congress*, 1887) concludes his paper as follows: "I believe the operation which I have called kolpo-uretero-cystotomy, followed by the exploration and treatment of the diseases of the ureter and pelvis of the kidney, has a brilliant future of usefulness before it. In the treatment of pyelitis, renal calculi, and other obstructions of the ureters, it will restrict within narrow limits the operations of nephrotomy and nephrectomy." In the first case narrated the author was able to catheterise the ureters and to wash out the pelvis of the kidney by conducting his manipulations through a large fistulous opening involving the greater part of the vesico-vaginal septum. Encouraged by the success of this case, the idea of extending the method of treatment to cases of pyelitis when no fistulous opening existed, was conceived. This was illustrated in the instance of a female where hæmaturia had existed for over two years. The pelvis of the right kidney was suspected, from the location of the pain, to be the seat of the disease. In order to expose the right ureter, an opening into the bladder was made at the point where the duct pierces the vesical mucous membrane. When the orifice of the ureter was thus exposed, blood was seen exuding from it. The entrance to the ureter having thus been made accessible, the subsequent treatment, so far as the catheterisation of the ureter and washing-out were concerned, was the same as in the previous case, and the result equally fortunate. The use of Dr. Bozeman's utero-vesical drainage support prevented all inconvenience from incontinence of urine, and made the patient so comfortable that haste in closing the fistulous opening was considered unnecessary. The fistula was subsequently closed, and the restoration to health is reported as complete. In connection with this subject, Mr. Reginald Harrison (*Lancet*, March 10, 1888) published a paper on the possibility and utility of washing out the pelvis of the kidney and the ureter through the bladder. The author illustrates this by the narration of the following case: A middle-aged man was under observation for acute renal pain which, from the previous history, was probably due to a renal calculus. The symptoms continued, and nephrotomy was suggested, but the patient would not submit. Shortly afterwards the position of the stone changed, and there was reason to believe that it was lodged in the ureter. As the patient had previously passed calculi, it was thought not improbable that the ureter might be dilated.

After washing out, the bladder was filled with tepid water, upon which pressure was exercised by the evacuator usually employed in lithotripsy. The patient at once became conscious of something moving in the back, and subsequently half a teaspoonful of phosphate and urate *débris* was removed. This process was repeated on several occasions, with a similar result, and gave much relief. Other cases of the kind have been observed. Clinical facts such as these, taken in connection with pathological specimens, show that it is possible to reach the kidney in this way, and that the escape of calculi may thereby be facilitated. Further, the practice thus illustrated may be found useful in favouring the discharge of inflammatory products from the pelvis of the kidney, and as a means of applying direct medication in certain cases of hæmaturia which are generally regarded as being beyond the reach of surgical manipulation.

3. The treatment of some forms of incontinence of urine in the female.

Dr. N. Bozeman (*Trans. Ninth Internat. Med. Congress*) describes a drainage apparatus for use in certain cases of incontinence due to vesical fistula:—"The object of my method of treatment, preparatory to the performance of the operation for the closure of a fistulous opening, is to overcome and prevent the injurious effects of incontinence of urine, and to remedy the complicating injuries and diseases of all the organs involved." The mechanical contrivance employed for dealing with a case of incontinence of urine due to a vesico-vaginal fistula, consists of a utero-vesical drainage support made of metal or rubber. "The instrument is of a cordate or pyriform form resembling to a certain extent the uterus in form, and may be described as consisting of a body and neck. Its inferior surface is rounded, and rests in contact with the posterior vaginal wall. The upper surface of the body, which supports the cervix uteri and conforms to the vesico-vaginal septum, presents a broad shallow concavity or dish, which is continued forward on the neck of the instrument for about one half of its length in the form of a broad groove. In the bottom of the dish and groove are twenty perforations made of considerable size in order to prevent clogging by mucous and menstrual blood. The neck of the instrument is thinner than the body and curves backward, forming an arc of a circle, having a diameter of about two inches. The extremity by the neck presents a round opening which leads into the cavity of the instrument, and allows the escape of the urine. The posterior extremity of it is broad and rounded, and occupies the fornix of the vagina behind the cervix uteri. A flexible rubber tube fits over

the neck and connects with a rubber bag, which is buckled to the thigh near the knee. At the point where the tube joins the bag is a valve which prevents the return of the urine when the limb is elevated. The lower extremity of the urinal is fitted with a stop-cock so as to allow it to be emptied when necessary. The instrument drains better in a sitting and upright position than in the recumbent, but in most cases the small amount of urine lost when lying down is considered by the patient a matter of slight importance, and causes but little inconvenience. When, however, the vagina is excessively voluminous and its walls are prolapsed, or the perineum is lost or badly lacerated, the instrument is retained in place with difficulty. In order to adapt the system of drainage to these cases and more satisfactory to the recumbent position, when the patient is confined to bed for a long period I employ a somewhat different form of instrument which I have called a utero-vesico-urethral drainage support."

This paper, which is fully illustrated and is of considerable length, deals very fully with the subject of incontinence of urine as observed following some injuries of the female bladder. The author has clearly shown the value of the instruments he suggests as temporary expedients during the time that precedes the permanent closure of the fistula by operation. Further than this, it seems capable of extension as a permanent means of relief to those rarer instances of cystitis and pyelitis where it is necessary to maintain, by the formation of a fistula, a condition of urinary incontinence for an indefinite period. There is probably no state of the urinary apparatus in the female more distressing and irremediable than the incontinence which sometimes follows the extraction of a stone where the urethra has been submitted to over-dilatation for this purpose. When the incontinence has existed for over a year, it may, so far as my experience goes, be regarded as a permanent misfortune. Under such circumstances it would seem desirable to establish a vesical fistula, with the view of making use of Dr. Bozeman's suggestion as a permanent means of relief.

4. On suction in the removal of foreign bodies from the bladder.

Mr. Reginald Harrison (*Lancet*, Oct. 29, 1887) illustrates the use of suction by the narration of a case where a stiff pig's bristle, five inches in length, coated with phosphates, was removed from the bladder of a man. Previous attempts to seize it with the lithotrite having failed, a large-eyed evacuating catheter was introduced, to which a powerful rubber syringe filled with water was attached. After a few movements of the syringe, it was felt that

something had been drawn into the eye of the catheter, which proved, on withdrawal of the latter, to be the bristle. Mr. Harrison refers to other cases of a similar nature where this expedient had proved successful.

5. Solutions for washing out the bladder.

Utzmann, of Vienna (*Birm. Med. Review*, Feb., 1888), uses the following with good results:—For an irritable bladder, lukewarm water with a little tincture of opium; or solution of cocaine, $\frac{1}{4}$ per cent.; or resorcin, $\frac{1}{2}$ per cent.; or carbolic acid, $\frac{1}{6}$ per cent. When urine decomposes in the bladder, solutions of potassium permanganate; $\frac{1}{10}$ per cent.; or 3 drops of amyl nitrate to a pint of water. For phosphaturia, $\frac{1}{10}$ per cent. salicylic acid.

I may also add that with the irritable bladder, connected with prostatic hypertrophy, great advantage has been found from the use of $\frac{1}{2}$ grain cocaine suppositories to commence with. The constipation which follows the use of opium in cases of this kind often proves a most serious complication, and by deranging the liver and the digestive apparatus, counteracts all the good effect of the sleep and quietude that is thus obtained. I have not found this to be the case with cocaine, and consider it of much service in various forms of vesical irritability.

6. Electrolysis in stricture.

Dr. F. Tilden Brown (*Journ. of Cutaneous and Genito-Urin. Diseases*, Aug., 1888) draws the following conclusions as to this plan of treatment:—(1) That it encourages patience and gentleness. (2) That it furnishes two aids in overcoming spasmodic strictures: (a) lubrication, and (b) an anæsthetising influence. (3) That it causes a slightly increased rate of exfoliation of hypertrophied epithelial masses. (4) That on theoretical grounds it should be tried in cases of deep stricture of doubtful nature, with urethral fistula. (5) That it is applicable to certain cases of obscure origin attended with painful and frequent micturition.

From the numerous papers that have recently come under notice, it cannot be said that electrolysis in the treatment of obstructive urinary affections has maintained its position. Probably the conclusions drawn by Dr. Brown represent all that can be said of it, thus indicating how extremely limited is its application to the surgery of these parts. No better material for testing the power of electrolysis in reconstructing animal tissues can be found than the scars following burns (which are analogous with stricture tissue), and where the process is capable of actual demonstration. Dr. Brown's paper analyses a very large number of cases, and is accompanied with an extensive reference to other observers.

7. Internal urethrotomy and the use of the bougie conductrice with the graduated catheter in combination.

Mr. John Croft (*St. Thomas's Hosp. Reports*, 1887) gives the results of his treatment in fifty cases. Teevan's urethrotome is preferred.

The stricture having been divided, "the urethrotome and staff are to be withdrawn until the bougie conductrice appears at the meatus. The two portions of the apparatus are now to be unscrewed, and the bougie conductrice left in the urethra. An elastic catheter (No. 10, English) is to be screwed on to the bougie conductrice, and so conducted into the bladder. When the urine has been drawn off the operation has been completed. The bougie conductrice is very useful at this stage of the proceedings; it enables the operator to avoid the risk of entangling the point of a catheter in the wounded part of the urethra. Harm might be done by lacerating the wound with a catheter." This is a good practical point in connection with the performance of internal urethrotomy which is not sufficiently known or recognised.

8. Traumatic stricture of the urethra.

Mr. J. H. Morgan (*Pract.*, Aug., 1887) describes the following operation in a case of impervious urethra from a traumatic stricture complicated with perinaal fistula and scrotal infiltration:—The bladder having been rendered prominent by rectal inflation, a suprapubic cystotomy was performed. A long silver probe was then passed through the wound along the urethra until it reached the posterior aspect of the stricture. A median perinaal incision was next made down to the point of the probe, and the mucous membrane was drawn down and stitched to the skin on either side of the incision. The wound in the bladder was united with catgut, and the abdominal incision closed with silk sutures, a fillet of horsehair being inserted for drainage. This wound healed by first intention. The patient made a good recovery, voiding his urine through a nipple-like elevation just behind the scrotum.

With an impervious urethra due to cicatrix there are many advantages connected with the proceeding Mr. Morgan adopted, as it prevented any injury being done to what remained of the sound urethra behind the stricture. The latter condition can by no means be guaranteed when a perinaal section is performed without a guide. The proceeding which Mr. Morgan describes must, however, not be regarded as necessarily a final one, where the patient urinates through the perinaum, as it is quite possible, in some instances, to restore completely the continuity of the

whole canal. This has been effected by a division of the cicatricial tissue from without, and the remodelling of the canal, and also by the excision of the stricture.

9. Perineal lithotrity.

Mr. Reginald Harrison (*Lancet*, Sept. 22, 1888) points out that one great advantage lithotomy possesses over lithotrity, is that it permits the operator to satisfy himself by the use of the finger that every fragment of stone has been withdrawn. With the view of securing this advantage in combination with those modern litholapaxy possesses, Mr. Harrison advocates the employment of perineal lithotrity in some cases, as presenting the means (1) for the digital exploration of the bladder and associated parts, both before and after the removal of the stone; (2) the rapid evacuation of the stone; and (3) the drainage and irrigation of the bladder, should this prove necessary. The operation consists in the simple expedient of opening the membranous urethra in the median line, so as to permit the introduction into the bladder of a pair of specially made crushing forceps, by which the stone is broken and evacuated. The latter consist of a strong pair of rather narrow-bladed bladder forceps, with a cutting rib down the centre. They are sufficiently strong to break any stone which can be fairly grasped; they are, in fact, constructed on the same principle as the blades of a lithotrite, and are intended for use in the same manner.*

Looking at the fragments of stone removed in the case related, it can be judged what these forceps are capable of doing, both in crushing and extracting. In this instance they enabled me to break up and remove a calculus in a few minutes, a process which could not have been safely accomplished under half an hour by the ordinary lithotrite and water evacuation.

Apology is hardly needed for bringing under notice an operation which may, in some cases, be revived with considerable advantage. Circumstances are now very different to what they were twenty-five years ago, when perineal lithotrity had numerous advocates. Thompson had not then taught us the great value of digital exploration in diseases of the bladder; Otis had not demonstrated the full capacity of all parts of the male urethra to dilatation; Bigelow had not shown us the tolerance of the bladder to prolonged but gentle manipulations; nor had we learnt the value of drainage and irrigation of the bladder, and how much operative surgery was capable of doing for the enlarged prostate when this was found to complicate stone. In the presence of

* They are made by Messrs. Krohne and Sesemann, of London.

these advances, I believe that perineal litholapaxy will be found of considerable service, and that its more general employment will tend to reduce the number of stone recurrences after litholapaxy as usually practised.

10. Suprapubic cystotomy for embedded calculus.

Mr. J. H. Morgan (*Lancet*, Oct. 22, 1887) narrates the case of a boy sixteen months old where this operation was performed. The stone was felt lying in a sacculus in the region of the trigone, below and between the orifices of the ureters, and overlapped by the mucous membrane to such an extent, that it became necessary to raise the calculus from below by the assistance of the right forefinger in the rectum. By this means it was easily freed and pushed into the cavity of the bladder, where it was grasped and removed by a pair of forceps. The patient made a good recovery.

This case illustrates the advantages of suprapubic cystotomy in dealing with impacted or embedded calculi, as it permits not merely of the exploration, but the inspection of the interior of the viscus. Aided by the electric light, as now adopted, it is almost impossible for a stone to escape detection wherever it may be situated, or however much the neck of the bladder may be distorted by a large prostate.

11. Electric illumination of the male urethra.

Mr. E. Hurry Fenwick (*Brit. Med. Journ.*, March 3, 1888) illustrates the value of this mode of inspecting the urethra. Speaking of treatment, he says: "Every diseased patch can be treated topically without withdrawing the cannula, for the reflector is so deeply placed in the lantern, that bougies or stylets, armed with wool or medicaments, can be passed over its summit and down the cannula in the very axis of the light. Thus the observer can govern the method and extent of his treatment, and watch the effect at the same time." Writing upon the subject of electric endoscopy, Mr. Walter Whitehead says (*Brit. Med. Journ.*, April 7, 1888): "As there are few urethras with a capacity of 40 French gauge, I propose using, as I have done, the cystoscope through a median incision in the membranous urethra upon those patients whose urethras will not admit the instrument in the ordinary manner."

This is a valuable suggestion, which has already been put in practice with good effect. The light that is now obtained is sufficiently powerful for the examinations proposed. All that is necessary is to increase the area of observation whenever this can be safely done, as Mr. Whitehead illustrates.

12. Foreign body in the male bladder.

Mr. Buckton Browne (*Brit. Med. Journ.*, June 30, 1888) records

an instance where a patient, for some urinary irritation, passed a paraffin bougie up his urethra, the greater part of which seems to have been drawn into the bladder. This caused signs of irritation, for which advice was obtained. Six weeks afterwards Mr. Brown removed, with the lithotrite, some paraffin, incorporated with a good deal of phosphatic matter. After the mass had been thoroughly broken up, Nature was left to complete the cure, the patient eventually voiding all the foreign material. One or two instances have come under my observation where light substances, such as tallow and pieces of taper or candle wick, have been passed into the bladder. Mr. Cadge mentioned to me a somewhat similar case, where the difficulty in extracting the foreign body was due to its floating on the urine, and not, as in the case of a stone, sinking to the most dependent part of the viscus. It is as well to remember this practical point in connection with the search for foreign bodies in the bladder.

13. Suprapubic urination.

Mr. Buckston Browne (*Brit. Med. Journ.*, Aug. 4, 1888) describes an apparatus for use when it is desirable to keep a suprapubic opening into the bladder permanently patent. In the instance recorded it proved of great advantage, enabling the patient to go about with comfort. The apparatus (figured in the original paper) consists of a tube, secured by a silver plate and straps, through which a catheter passes into the bladder, and conducts the urine into a urinal, which is strapped to the patient's leg. The usual clothes are worn, and the patient can walk and drive with ease.

14. The value of saccharin in ammoniacal urine.

Dr. James Little (*Dublin Journ. of Med. Sci.*, June, 1888) gives particulars of some cases of chronic cystitis where saccharin appeared of value in correcting the offensive character of the urine. In all cases of offensive urine we should endeavour to determine how much may be due to retention and decomposition. The great majority of cases of this kind may be explained in this way, and yield to catheterism and irrigation of the bladder. Still, mechanical causes will not always account for what proves most annoying to the patient as well as to his friends. For the purpose of deodorising the urine by internal medicines naphthalin has proved of much service; whilst boracic acid, in some instances, seems effectual in preventing it undergoing ammoniacal decomposition. I have not yet been able to satisfy myself that saccharin possesses the properties which have been ascribed to it by Dr. Little in relation to the urine. The suggestion, however, is worthy of a more extended experiment.

15. Radical cure of hydrocele.

Mr. Henry Morris (*Royal Med.-Chir. Soc.*, 28th Feb., 1888) pointed out that there was no method of radical cure yet devised which was not liable to occasional failure. The circumstances under which incision or excision was to be preferred to injections were the following: (1) When we were in doubt as to the precise nature or relations of the hydrocele sac; for example, whether the tumour was a congenital hydrocele, or a hydrocele of a hernial sac; (2) In some cases in which hernia complicated a hydrocele; (3) When a foreign body in the tunica vaginalis was the cause of the hydrocele; (4) When we had reason to think that the hydrocele was caused by, or associated with, a diseased condition of the testes, for which castration would be the right treatment; (5) When, as in a case under the author's care, a vaginal hydrocele was associated with an encysted hydrocele of the cord and a bubonocoele on the same side. Two cases were narrated of recurrence of the hydrocele after excision of the sac. In the discussion that followed, Mr. Treves stated that he had been in the habit of using for injection a solution of iodine known as Curling's, which was stronger than the B. P., and of leaving two drachms of that in the sac. Sir Joseph Fayrer was strongly of belief that the injection of two drachms of tinct. iodi, undiluted would cure very nearly all simple hydroceles. That should certainly be first tried; of other injections he had used, none were nearly so good; for many cases one tapping was sufficient; and some Indian cases got well in England without any operation.

Mr. J. S. McArdle (*Dub. Journ. of Med. Science*, Sept., 1887) concludes an article on the radical cure of hydrocele with the passage, "I must not be taken as advocating the removal of the tunica vaginalis in all cases of hydrocele, nor must I be understood as in any way discountenancing injection, which I hold to be the most generally useful method. I have adopted and recommended the method of dissection only in those cases in which injection has been tried and found wanting.

Dr. C. H. Bedford (*Edin. Med. Journ.*, May, 1888) thus writes: "The treatment I find almost universally applicable and successful is the tapping, thorough evacuation of the sac, injection of tinct. iodi and water, of each two drachms, thorough shaking up of the injection, so that all parts of the secreting surface may be brought in contact with the fluid, and the subsequent careful and efficient strapping of the testicle of the affected side, or if bilateral, of each separately."

Mr. Thomas Jones (*Med. Chron.*, Aug., 1888), referring to a recorded case by Rontier (*Revue de Chir.*, 1887, No. 9), where

excision and resection of the tunica vaginalis were practised, expresses his opinion that the proper method was adopted in this case, for otherwise, owing to the peculiar thickening of the tunica vaginalis, a recurrence would almost inevitably have taken place. The portion removed consisted of several layers of cellular tissue. Incision of the tunica vaginalis, with or without resection of portions of it, is an operation easy of execution and devoid of danger. It has two advantages: rapidity of the cure, and the certainty that by means of it we get rid of cysts and cartilaginous nodules in the thickness of the membrane, often the cause of a hydrocele."

Mr. F. A. Southam (*Lancet*, Sept. 10, 1887) reports nine cases. Three were treated by tapping and injecting a drachm of equal parts of carbolic acid and glycerine, and allowing it to remain in the sac; two by antiseptic incision, and four by excision of the tunica vaginalis. In each instance, except one, the hydrocele was of the common variety.

From some experience of this affection it appears to me that recurrences are often due to the very imperfect way in which the operation of tapping and injecting is performed. So far as I can learn, the practice of the late Professor Syme was most successful in respect to this operation, and much stress was laid by him (1) in thoroughly emptying the sac without letting blood enter it; (2) in using at least two drachms of the old tincture of iodine (E. P.); and (3) by manipulating the scrotum with the hand to ensure the access of the injected fluid to all parts of the cavity. Structural changes in the parts may occasionally interfere with the success of this proceeding, on the principle that what will arouse action in a sensitive tissue fails to do so when thickening and chronic induration have been substituted. Under such circumstances incision and excision of the honey-combed tunic may be advantageously practised.

16. Prostatectomy and prostatotomy.

Some valuable papers have appeared relative to the operative treatment of the enlarged prostate. I purpose referring to these under the above headings, including under the former those operations where more or less of the obstructing part is removed; and under the latter term—those where the proceeding is limited to a section of the obstruction.

(1) Mr. A. F. McGill (*Clinical Society of London*, Nov. 11, 1887) read a paper on suprapubic prostatectomy, and related three cases where the operation had been successfully performed. The operation consists in opening the bladder above the pubes in the usual manner, and removing with scissors and forceps that

portion of the enlarged prostate which prevents the outflow of urine. In all the instances recorded more or less of the projecting floor of the prostate, or, as it is commonly called, the "third lobe," appears to have been removed without much difficulty. The benefits claimed for this operation are that it permits of free urine drainage and permanently removes the cause of obstruction. In a note on the surgery of the enlarged prostate, Dr. W. T. Belfield (*New York Med. Record*, March 10, 1888), writes:—"In June, 1886, I undertook suprapubic prostatectomy, but after the extraction of two large calculi, was forced by the patient's condition to abandon the operation. In the same year I executed the plan of removing a middle lobe of the size and shape of a small almond. The patient, seventy-three years of age, who for a year had been dependent upon his catheter, has urinated freely since. In a second case I repeated the operation, removing a mass as large as a bean." Mr. E. Atkinson records two cases (*Brit. Med. Journ.*, April 28, 1888), where he operated in a similar manner. Mr. Jessop also reports in the same journal an instance of his own.

(2) Turning to cases where prostatotomy or a section of the part has been performed, Dr. A. T. Cabot (*Journ. of Cut. and Genito-Urin. Diseases*, January, 1888) reports two where this operation was practised. After an analysis of the various methods of operating, he expresses preference for the perineal proceeding as advocated by Mr. Reginald Harrison (*Internat. Med. Cong.*, Copenhagen, 1884). Prof. Annandale (*Edin. Med. Journ.*, June, 1888) also adds his testimony in favour of this proceeding. Dr. Meinhard Schmidt (*Deutsche Zeit. f. Chir.*, 1888) reports a case of prostatic hypertrophy, where, in consequence of the obstruction and cystitis, a considerable portion of the growth was removed by a suprapubic cystotomy. This was followed four weeks afterwards by the performance of a median perineal section with division of the floor of the prostate as described by Harrison. The results obtained were most satisfactory, the patient being able to hold and void his urine in an almost natural manner, thus entirely getting rid of his previous symptoms.

Reports of this nature clearly show not only the progress that both prostatotomy and prostatectomy are making, but the great relief that these operations are capable of affording in properly selected cases. So long as a man with a fibromatous prostate is capable of keeping himself reasonably comfortable by the use of the catheter, nothing further is to be urged. When however, as in some instances, the obstruction becomes so great as to prevent the proper use of the instrument, or as to maintain a

constant state of cystitis, then one or other of the proceedings just referred to may be considered with a good prospect of obtaining permanent relief. My own feeling is generally in favour of perineal prostatotomy, having regard to the free access that can thus be safely made to the bladder and the great advantage this position offers for that thorough and prolonged drainage, by a proper tube, which all these cases require if they are to be permanently successful. On the other hand, cases are occasionally met with where, from the size of the prostate and the projecting character of the fibromas connected with it, the suprapubic opening affords the most direct and certain manner of combining exploration with extirpation. Dr. Schmidt's case, where the two methods of operating were combined, is extremely interesting, and is likely to prove an excellent precedent for some few cases of this kind.

VENEREAL DISEASES.

By ALFRED COOPER, F.R.C.S.,

Surgeon to the Lock Hospital.

I. On preventive treatment in primary syphilis.

Dr. Bronson read a paper on this subject before the New York Academy of Medicine (*New York Med. Journ.*, March 24, 1888). With regard to the doctrine of syphilitic infection, Dr. Bronson adopted the view that the process is at first a purely local one. During the formation of the initial lesion, certain infectious elements may find their way in small quantity into the general circulation. Some of these might be at once destroyed or eliminated, but they would gradually increase with the growth of the primary lesion and with the glandular changes, so that sooner or later re-inoculation would fail to produce any effect, but constitutional symptoms would still be wanting. In the end, however, the infectious materials accumulate in the blood in such excess, that the organism reacts with the characteristic manifestations of general disease. It must be admitted that preventive treatment affords little hope of success, but excision of the initial lesion is a perfectly safe, rational, and proper surgical procedure; it removes the annoying symptom and a possible source of danger to others. If the induration be really a *dépôt* whence fresh virus is supplied to the economy, its removal has another object, but is seldom successful. Removal of glands is useless, even if practicable. With regard to constitutional treatment during the primary stage, Dr. Bronson, after discussing various arguments for and against giving mercury before any so-called secondary manifestations occur, recommends a method of regional treatment, designed to accomplish a more direct employment of mercury in the region where the chief source of danger has its seat. The scheme consists in the local use of antisymphilitics by means of multiple small subcutaneous injections and by inunctions over the area surrounding the sore. It is supposed that the remedy may

thus be introduced little by little into the lymphatics, and conveyed in sufficient amount to the diseased glands to destroy the infectious germs, or to retard their multiplication. Each injection should contain not more than one-hundredth of a grain of the perchloride; the spots chosen being the skin of the abdomen and thighs, and beneath the primary induration. Inunction with mercurial soap may be employed in the perinæum, and on the penis and scrotum. Dr. Bronson gives no statistics in connection with his plan, but claims to have sufficiently tested its feasibility.

2. The excision of chancres.

Dr. Bockhart, of Wiesbaden (*Viertelj. f. Derm. u. Syph.*, 1888, Heft 1, s. 105), states, as a result of his observations, that a certain constant relationship exists between the results of chancre excision and the kind or form of chancre excised. It was found that the excision—no matter how soon effected—of chancres, which began as primary papules, had no effect in preventing constitutional symptoms. On the other hand, the excision of induration, which had become developed in soft ulcers, if done sufficiently early, would prevent any further symptoms. Auspitz, in 1877, noted this peculiarity as connected with the latter class of sores. Dr. Bockhart has looked through the reports of cases of chancre excision, and finds that in the large majority of cases in which the result was successful the sores were of the so-called "mixed" kind; but when the result was negative, in most cases the lesion was represented by a papule. The explanation of this difference is said to be as follows:—The appearance of a papule proves that for some little time after infection there was no obstacle of a local or general character to the spread of the virus. If, however, the initial lesion of syphilis is connected with a pre-existing suppurating ulcer, or so-called soft sore, the activity and the condition of the white blood-corpuscles collected at the base of the ulcer will prevent the virus from penetrating rapidly into the surrounding tissues, and will thus for some time protect the organism.

3. The treatment of syphilis.

In a reprint, with additions, of *Essays on Syphilis (Mémoires de Chirurgie, tome cinquième)*, Professor Verneuil thus expresses himself with regard to the treatment of syphilis. (1) The treatment should be begun as soon as the diagnosis is made; there is no advantage in delay. (2) Expectant treatment (so-called) may enlighten the physician as to the evolution and gravity of the disorder; but it has the disadvantage of wasting precious time, during which the virus becomes deeply lodged in the system, and produces severe changes in the structures and

fluids of the body. (3) The treatment should be steadily and patiently carried out; the malady is a chronic one, and about two years are required for its cure. (4) The disease may come to an end spontaneously; but such a course is rare, and can never be predicted. If treatment prove useless, it is unattended by serious inconvenience. (5) Mercury is the most powerful modifier of syphilis in the early stages; and if its action upon the virus cannot be demonstrated, it certainly acts advantageously on the isolated and successive manifestations. (6) At least as efficacious as any other remedy in ordinary moderate cases of the disease, it is indispensable for severe and obstinate forms, for visceral syphilis, and for treating the disease in pregnant women and in infants. There is no adequate substitute for it in dealing with all these cases. (7) Properly directed mercurial treatment, associated with suitable hygienic measures and tonics, is, in the vast majority of cases, absolutely devoid of ill consequences, and, thanks to the resources of our *materia medica*, toleration of the remedy can almost always be obtained. (8) The problem of the cure of syphilis without mercury has not as yet been solved, and there is no likelihood of a speedy solution. (9) The bichromate of potassium has no decided advantages as compared with mercury. Professor Verneuil adds that, in ordinary cases of secondary syphilis, he prefers to give mercury alone, and not to combine it with iodide of potassium. He rarely orders mercurial frictions, though he recognises their efficacy; and with regard to hypodermic injections, he regards it as impossible thus to cure syphilis in twenty or thirty days, as asserted by some practitioners.

4. The modern method of treating syphilis.

At a meeting of the New York Academy of Medicine (*New York Med. Journ.*, Dec. 3, 1887) a paper on this subject was read by Dr. P. A. Morrow, who pointed out that the main difference between the method of the present day and that in vogue up to within a comparatively few years consisted in the manner in which one drug, viz. mercury, was administered. This remedy, aided by iodide of potassium, remained the basis of all special curative treatment. In connection with his subject, Dr. Morrow had taken much trouble to ascertain, as far as possible, the value of the hypodermic use of mercury, and the conclusions he arrived at were as follows:—1. As regards simplicity, convenience, accuracy, rapidity of action, and the development of a maximum effect from a minimum quantity of the drug, the hypodermic method constituted a distinct improvement. 2. It was not so apt to cause unpleasant effects as other methods of using the drug. 3. Its efficacy in suppressing the active manifestations of

the secondary stage was recognised by all observers. 4. Whether, when thus administered, the potentiality of mercury was greater than when given in other ways, and the range of its specific action widened, was a question not as yet solved. 5. No proof had been given of the assertion that the effect of the hypodermic method was more decidedly permanent than that of other plans. 6. The statement that syphilis could be cured by injecting 25 centigrammes of the perchloride or 40 centigrammes of calomel was extravagant and absurd. 7. The hypodermic method was not suited for general use, because of the irritation, pain, and local accidents liable to ensue; the method should be placed in the category of adjuvants, its employment being especially indicated when rapid and thorough mercurialisation was desired, as, for example, when the integrity of an important organ was threatened. 8. In exceptional cases, marital syphilis, for example, when secrecy and the speediest possible suppression of the symptoms were especially demanded, the hypodermic method would be found very serviceable. 9. It might be used with advantage for cases in which the internal use caused much gastrointestinal irritation; and for tertiary syphilis whenever the iodides were not tolerated. In conclusion, Dr. Morrow regarded the hypodermic method as a decided acquisition to our therapeutical resources, but did not think that it would ever supersede the ordinary methods of employing mercury in the treatment of syphilis.

5. The practical treatment of syphilis, chancroids, gonorrhœa, and gleet.

Mr. Lowndes, of Liverpool, has communicated the results of his experience on this subject in a paper in the *Lancet*, May 26, 1888. For the local treatment of chancres and chancroids he recommends iodoform, with the Tonquin bean, a few grains of very finely powdered coffee, or a few drops of oil of rosemary, to disguise the smell. For chancres he uses black wash or blue ointment, and, when there is much irritation, a powder consisting of equal parts of oxide of zinc and grey powder. For general treatment he gives mercury and chalk, or blue pill, with or without opium. He regards inunction as the most effectual mode of administering mercury. For eruptions he recommends an ointment of one part of ammoniate of mercury and three parts of oxide of zinc with glycerine and lard, to make a stiff cream. Mercurial vapour baths he regards as most suitable for skin eruptions and hospital patients. He fails to see any special advantage connected with Aix-la-Chapelle for syphilitic cases. For tertiary syphilis he has found that the addition of the

acetate (15-grain doses) to the iodide of potassium has rendered the latter to be more easily tolerated, and that large doses are less likely than small ones to produce coryza. For gonorrhœa and gleet he advocates the old-fashioned treatment with antacids, followed by copaiba and cubebs, and the chloride or sulphocarbolate of zinc for injections. For chronic cases Easton's syrup is sometimes useful, coupled with the passage of full-sized metallic bougies.

6. Syphilis and its treatment.

In a post-graduate lecture on this subject (*Lancet*, May 5, 1888) Mr. J. Astley Bloxam discusses the ordinary symptoms of syphilis and their treatment. He lays great stress on due attention to hygienic principles, and the avoidance of alcohol and late hours. He regards mercury as the indispensable remedy, and, as mentioned in another paragraph (*see* No. 14), recommends the intramuscular injection of a solution of the perchloride with chloride of ammonium. He states that after two injections, equalling two-thirds of a grain of mercuric chloride, the physiological action of the drug is produced, and can be maintained by an injection once a week, the symptoms of the disease, both local and constitutional, undergoing most rapid and favourable change. He advises a mild but continuous course of treatment for twelve to eighteen months, during which six or eight grains are injected.

7. The abortive treatment of syphilis.

A paper on this subject was read by Mr. Hutchinson before the Medical Society of London (*Lancet*, February 25, 1888). Evidence was adduced to prove that, in many cases, when mercurial treatment was begun early for the indurated chancre no secondary symptoms followed, and the term "abortive" was used to describe a treatment which aimed at this result. The author admitted that the term did not imply annihilation of the malady, and that it was quite possible that after an entire omission of all secondary phenomena, as a result of treatment, the patient might yet have tertiary symptoms. The belief was expressed that mercury was antagonistic to the life of the microbe, which in all probability existed as the cause. The author's practice was to administer mercury as soon as the nature of the case became evident, and to continue the remedy for very long periods, taking care to avoid salivation. He recommended single grain doses of grey powder from three to six times a day, according to the case. Given thus early, it always caused the primary induration to melt away and the secondary eruption to fade, and it always modified greatly, if it did not wholly prevent, the evolution of the secondary stage when given before it commenced. A

combination of iron and mercury was often useful in debilitated subjects.

8. Small doses of mercury in syphilis.

Mr. S. C. Griffith recommends (*Brit. Med. Journ.*, January 21, 1888), for cases of hard sore, hydrarg. cum cretâ gr. $\frac{1}{6}$ t.d. with any tonic or other medicine, with the view to keeping the patient in the best possible state of health. Stimulants should be avoided, and the medicine should be continued for a month, and then given twice daily for three months or more, and then once daily for a considerable time. If, after the third or fourth month, the symptoms prove rebellious, m.v. to x. liquor. hydrarg. perchlorid. should be given in addition twice or three times a day. Mr. Griffith has tried this plan for more than ten years with uniform success, and finds that its adoption checks the development of secondary symptoms.

9. The diagnosis and treatment of syphilitic affections of the nervous system.

A paper on this subject was read by Dr. McCall Anderson at the recent meeting of the British Medical Association (*Brit. Med. Journ.*, Sept. 29, 1888). Energetic treatment was advised whenever the nervous affection was suspected to be of a syphilitic nature, inunction and subcutaneous injection being the methods preferred. Brilliant results were recorded in old-standing cases, and sometimes after the iodide of potassium had failed. For inunction, the B. P. ointment, or Shoemaker's 50 per cent. mercurous oleate were recommended. For injection it was recommended to use m.xv. to xxx. of a solution of the perchloride (gr. iv. to $\bar{3}$.) to be injected daily into the cellular tissue of the hip or other convenient part containing much subcutaneous fat. Sensitiveness should first be abolished by freezing the skin; then $\frac{1}{8}$ gr. morph. sulph. should be injected. The syringe is then detached from the cannula and filled with the mercurial solution. After the injection, lumps of ice should be kept on the part till all uneasiness has subsided. Whenever mercury failed, iodide of potassium should be given in 10-grain doses, and increased till the symptoms yielded or the medicine disagreed.

10. The treatment of syphilis by injections of yellow oxide of mercury.

Dr. Rosenthal, of Berlin (*Viertelj. f. Derm. u. Syph.*, 1887, s. 1102), in treating syphilis, uses injections of half a gramme of the yellow oxide of mercury, suspended in 15 grammes of almond or olive-oil. He makes from three to five injections into the gluteal regions, with antiseptic precautions, and believes that this method of treating syphilis is as efficacious as inunction.

Abscesses and salivation were never produced; there was occasional infiltration to a slight extent. Dr. Rosenthal recommends this method as free from drawbacks and potent in its results. With regard to subcutaneous mercurial injections in general, Dr. Rosenthal asserts that they are convenient, cleanly, cheap, and efficacious, and that exact dosage can be thus secured. The soluble salts of mercury cause less pain, but they are more speedily excreted; the insoluble salts remain longer in the system, and are, therefore, more potent. The gluteal region is the best adapted for the injections, of which the intramuscular form is the best. After the fluid has been injected, the part should be gently rubbed. Abscesses can be always avoided. Subcutaneous injections are suitable for males; but rarely for females, and only in exceptional cases for children.

11. The treatment of syphilis by means of subcutaneous injections of yellow oxide of mercury.

Dr. Krecke, of Erlangen (*Centralbl. f. Chir.*, 1888, No. 13), has thus treated thirty-two cases of syphilis, with results presumed to be favourable. The injections are stated to have caused little if any pain; on the second day, diffuse infiltration or nodules of various sizes appeared in the subcutaneous tissue, but these symptoms generally subsided between the fifth and the tenth days. In some cases there were no perceptible alterations. Corpulent subjects suffered most inconvenience from the injections. The gluteal regions were the spots selected, and in all 143 injections were employed, the remedy being used every fifth or seventh day, and suspended in oil in the proportion of 1 or 1.5 to 30. Three injections were sufficient in some cases, and nine was the maximum number required for the suppression of the manifestations, the treatment being continued on an average for twenty-five days. The disappearance of the eruption was not so rapid as when calomel was used in a similar manner; but the local symptoms of irritation were much less violent, and in no case did salivation occur.

12. The treatment of syphilis by subcutaneous injections of calomel.

An interesting paper on this subject has been contributed by Dr. Edvard Welander, of Stockholm (*Viertelj. f. Derm. u. Syph.*, 1887, s. 1040). Forty-two cases in various stages of the disease were thus treated, ten centigrammes of calomel being injected every eight days, and four being the average number of injections made. The effect upon early and mild symptoms was very marked from the first; but severe lesions were, in the absence of local treatment, much less influenced, and some remained

unaltered until iodide of potassium was given. The important question referring to the re-appearance of symptoms was not neglected by Dr. Welander. So far as he could ascertain, relapses took place among two-thirds of those cases in which the injections constituted the sole form of mercurial treatment. In twelve persons to whom mercury had been administered before the injections, there were four in whom relapses took place. These results accord with those obtained in the military hospital at Stockholm. The occurrence of abscesses and painful infiltrations has been often cited as a great drawback attendant upon injections. The abscesses in Dr. Welander's cases occurred around the spots where the calomel was deposited, and not in the track of the needle. Their formation may generally be prevented by keeping the patient at rest. It is worthy of note that the pus of such abscesses always contains a considerable number of globules of mercury; and in this way more or less of the mineral escapes from the system when the abscess discharges its contents. For this and for another reason it is incorrect to say that with subcutaneous injections we have a means of estimating the exact quantity of the mineral introduced. Dr. Welander finds that a portion (perhaps one-fifth) always remains in the syringe. As regards the absorption of the mercury, the urine affords positive indications even many weeks after the treatment has been discontinued; but similar evidence is obtainable after other methods of administration. In conclusion, Dr. Welander regards the method as simple, convenient, and effectual; the quantity of mercury appearing in the urine is greater than under any other methods of using the remedy.

13. The treatment of syphilis by means of deep subcutaneous injections of the yellow oxide of mercury.

Dr. T. Trzcinski, surgeon to the St. Lazarus Hospital at Warsaw, has published a paper on this subject in the *Viertelj. f. Derm. u. Syph.*, Heft iii., 1887, s. 934. After alluding to the introduction of the subcutaneous method, the opposition which it encountered, and to the increasing number of surgeons who now practise it, the author points out that the soluble preparations, which were first suggested, are rapidly excreted from the system, and are, therefore, serviceable only for slight forms of the disorder. On the other hand, the insoluble preparations of mercury, of which calomel is the representative, remain longer in the system and act beneficially upon the disorder without producing any poisonous effects. Scarenzio, in 1864, first made use of

calomel for subcutaneous injections: this preparation, when acted upon by the chlorides contained in the blood and lymph, becomes converted into the perchloride. Scarenzio's formula was as follows: calomel, 10·0; pulv. gum. arab. purissi., 5·0; aque destill., 100·0. The drawbacks connected with the employment of calomel were the pain and abscesses which occurred in a large proportion (35 per cent.) of the cases. Dr. V. Watraszewski endeavoured to find a less irritating preparation of mercury, and selected the yellow oxide as the most suitable in this respect. His formula is as follows: hydrargyri oxydati flavi, 1·00; gummi arabici, 0·25; aq. destill., 30·0; ft. suspensio. A Pravaz syringe-full contains ·04 of the yellow oxide. The injection is made deeply into the gluteal region, the needle being passed perpendicularly into the muscle for nearly an inch, and the operation is repeated every five or six days on the right and left side alternately. The parts on a line with the trochanters on each side, at about an inch and a half behind them, are the best suited for the injections. This method has been tried by Dr. Trzcinski upon 114 patients during a period of nine months; in the previous year he had adopted it in the female wards. It would seem that women are far more liable to suffer from abscess than men, but, owing to the increased care now taken, such consequences are becoming far less common. In the male cases the pain was never severe, and was never complained of by the patients. Slight swelling in the gluteal region, with more or less marked infiltration, was generally observed on the second or third day, but more or less rapidly subsided. Salivation occurred only in one case, after the third injection; in two other cases there were slight symptoms, necessitating a suspension of the treatment. Such a comparative freedom from stomatitis is contrasted with the frequency of the affection in cases in which inunction is used; the mouth, however, must be carefully attended to while injections are being employed. If symptoms of stomatitis be set up by the first injection, inunction should be substituted when these have subsided. With regard to the number of injections, this must depend upon the character of the symptoms; the slighter forms disappear after from four to six injections, and the latter number sufficed for the cure of a case in which there was extensive superficial ulceration. Of the male patients, three presented themselves with a return of their symptoms a few weeks after being discharged from hospital. As a result of his experience, Dr. Trzcinski states that the yellow oxide is preferable to calomel; that the injections cause little or no pain, take up little time, and do not necessarily prevent the patient from following his occupation.

He regards, however, this method of treatment as subsidiary to that of inunction, and desirable only when the latter cannot be practised. With regard to the all-important question of relapse after treatment by a few injections, he only declares that a large and prolonged experience is necessary to determine whether in this respect the method is more or less satisfactory than others.

14. Intramuscular injection of mercury in syphilis.

This method of treatment was advocated by Mr. J. Astley Bloxam in a paper read before the Medical Society of London (*Lancet*, April 28, 1888). Since 1884 the author had employed perchloride of mercury injections 1,924 times at the Lock Hospital, using 20 drops of a solution of 8 grains to the ounce, and injecting it deeply into the gluteus maximus each week on alternate sides. This solution, however, is prone to decomposition under the influence of light, and to avoid this drawback, Mr. Bloxam subsequently added chloride of ammonium, 16 grains to 32 grains of the perchloride dissolved in two ounces of distilled water. This solution is said to be permanent, and 10 minims contain $\frac{1}{2}$ grain of the perchloride. It had been employed by Mr. Bloxam upwards of 900 times during the previous six months; it was found to cause little or no pain, and no induration unless blood were extravasated. Abscesses were never produced. The results were said to be very satisfactory in all forms of the disease; after perhaps eight injections, once a fortnight was found sufficient till all the symptoms had disappeared; then the injection was made once a month, carrying on the treatment for a year or eighteen months, and introducing 8 or 10 grains of the perchloride into the system. The absence of purging and signs of gastric disorder, and the exact dosage, were among the advantages of the method of treatment by injections.

15. The subcutaneous injection of grey oil in syphilis.

This mode of treatment was advocated by Prof. Ed. Lang in a paper read before the Imperial Royal Society of Physicians at Vienna (*British Medical Journal*, June 16, 1888). "Grey oil" contains 30 per cent. of mercury, and is composed as follows:—Hydrargyri, lanolini, āā 3 parts; ol. olivi 4 parts. The injection of 3 decigrammes is said to cause most of the symptoms to disappear, or at least to diminish in severity, the improvement continuing for two or three weeks. The author usually injects 1 to $1\frac{1}{2}$ decigrammes in two places on the back or buttocks every five to eight days for two or three weeks. A pause is then made for twenty-one days, and the injections are resumed until $1\frac{1}{2}$ to 2 grammes have been introduced. Stomatitis and other unpleasant

symptoms very seldom occur. The grey oil is a very efficient preparation, and the dose can be exactly estimated; suppuration had never occurred, although several thousand injections had been made. Prof. Lang regards the method of subcutaneous injection as especially suitable for syphilitic affections of the nervous centres and for the local treatment of gummatous infiltrations.

16. Salicylate of mercury as a remedy in syphilitic diseases.

In April, 1887, Dr. Bruno-Chaves, of Rio Janeiro, stated in the *Medical and Surgical Reporter of Philadelphia* that the salicylate of mercury will become as essential to therapeutics as the iodide of potassium, calomel, and other useful medicines. In a paper contributed to the *Annales de Derm. et de Syph.*, April, 1888, he endeavours to make good this assertion. He states that Dr. Silva Arango was the first to introduce this preparation as a remedy for syphilis, and that another of his colleagues has employed it with success in doses varying from 5 milligrammes to 5 centigrammes in the twenty-four hours, in the form of pills. He also recommends for external use in syphilitic affections an ointment composed of from 50 centigrammes to 2 grammes of the salicylate to 30 grammes of vaseline. Dr. Arango states that the salt effectually combats the most inveterate manifestations of syphilis in cases in which other mercurial preparations are powerless.

17. The action of mercury upon the system.

Dr. Rémond, of Nancy, has recently made some experiments on the absorption of mercury by the lungs and skin, the quantity contained in the urine being regarded as the measure of the absorption (*Annales de Derm. et de Syph.*, March, 1888). Attention was also paid to the modifications of nutrition under the treatment. In one case, a patient with symptoms of recent syphilis was confined in a cabinet in which mercurial vapour was constantly present, and the quantity of mercury eliminated by the kidneys was daily estimated. It was proved that the lungs were capable of absorbing therapeutical doses of the remedy. In another case, mercury was administered by inunction, the surfaces to which the ointment was applied being at once covered with sheet gutta-percha. The quantity of mercury eliminated was very small indeed. The main conclusions were as follows: (1) the lungs and skin are two channels for the absorption of mercury, and are independent of each other; (2) the pulmonary absorption is the more rapid; (3) the quantity of urea eliminated in twenty-four hours is much decreased. In the case of the first patient, symptoms of anemia set in after a month's treatment, and inunction was substituted. It would appear that the efficacy of the latter method

is due mainly to the fact that volatilised mercury is absorbed by the lungs.

18. The mechanical treatment of syphilitic ichthyosis.

The syphilitic affection of the tongue and mouth, known as ichthyosis or keratosis linguæ, is due to abnormal and unequal development of epithelium over different groups of papillæ, and often resists general as well as local treatment. Dr. Horovitz (*Lancet*, January 7, 1888) recommends removal of the thickened epithelium by scraping the surface with a sharp spoon. Several sittings may be required. The indurated surface is scraped away until many minute bleeding points appear, showing that the vascular loops in the papillæ of the dermis have been reached. Iodoglycerine, glycerine of borax, or a 10 per cent. solution of sulphate of copper is applied to the raw surface. The pain is said to be not severe as a general rule. It may, if necessary, be lessened by the use of cocaine.

No novel method of treating syphilis has been introduced during the twelve months covered by this edition of the "Year-Book of Treatment." The only new preparation is the salicylate of mercury, the value of which is vouched for by some practitioners of repute in Brazil. The method of administering mercury by subcutaneous injection has been freely tried of late, and considerable success is claimed by not a few practitioners. That many syphilitic manifestations become favourably modified or completely disappear when mercury is thus used has been amply proved, but the same result often follows inunction and administration by the mouth, which latter method is certainly more convenient in the majority of cases than any other plan. Besides, as often pointed out, the disappearance of symptoms is not equivalent to the cure of the disease, for which a long course of treatment is certainly necessary. Probably only a small minority of patients would submit to subcutaneous injections once or twice a week for many months, whereas small doses of blue pill or grey powder are taken for long periods without the least objection. No new work on syphilis has been published recently; Zeissl's *Lehrbuch der Syphilis* has reached a sixth edition, but contains little of importance in the chapters on treatment. Its editor recommends the expectant plan, and when this fails he has recourse to iodine, and only in obstinate cases to mercury.

THE DISEASES OF WOMEN.

BY D. BERRY HART, M.D., F.R.C.P.E.,

Lecturer on Midwifery and Gynecology, Surgeons' Hall, Edinburgh; Assistant Physician, Royal Maternity and Simpson Memorial Hospital; Assistant Gynecological Physician, Royal Infirmary, Edinburgh.

I. General survey.

In England, America and France, the subject which has engrossed the attention of gynecologists has been Apostoli's Electrical Treatment. The opinions on its value or uselessness—the former certainly predominating—have been very numerous; but, after all, have not advanced us much in deciding its real place. In Germany the subject has attracted very little notice.

In attempting to settle the present status of opinions on this subject, it must be distinctly kept in mind that no observers have as yet allowed for all factors in recording their successful cases. The tendency of fibroids to improve, as a rule; the fact that the majority of inflammatory affections get well if judiciously left alone; as well as the inexplicable improvements that take place without treatment in some cases of dysmenorrhœa, have not been sufficiently discounted in estimating results. Lastly, one of the most difficult factors to eliminate in estimating success, viz. the neurotic factor—a notoriously important one in women—has, in my opinion, been overvalued in this method; and the statements of the patient under electrical treatment, that she is much better, or “very content,” given too much weight to.

Another point to be kept in mind is that as yet we have no explanation given of its action. As a matter of history, we know that many modes of treatment now abandoned were said to give good results until undoubted facts in anatomy and pathology showed that the alleged lesion was non-existent. The most famous instance of this kind is that of ulceration of the cervix. No doubt the caustic treatment of this supposed condition would have gone on still, had not the fact of laceration of the cervix and the epithelial covering of the ulceration been demonstrated.

We may, however, say that electrical treatment under Apostoli has made a great stride in exactitude, and that we are now able to use it and study its effects more precisely. Apostoli has done for electricity what the introduction of the clinical thermometer did in temperature observations. That his method does good—for a time, at any rate—in certain cases of fibroids, and in all probability accelerates the absorption of inflammatory exudations, is undoubted: the numerous cases recorded, as well as my own experience, leave me in no doubt as to this. What it may do in acute inflammatory affections is very doubtful; but there can be no hesitation in saying that any attempt to apply it to the tubal and ovarian conditions now so successfully treated by abdominal section, can only end in disaster to the method—a consummation to be desired on this head; but, far more important, must be fraught with the most serious danger to life.

There is little doubt that it is practically a safe treatment in Fibroids, although some cases of death have been recorded, as well as instances of great risk to the patient's life from sloughing of the tumour.

In Cancer of the uterus no progress has been made in this country or America as to total extirpation by the vaginal method. In France more cases are being recorded; and in Germany, which has taken the lead now in this operation, the immediate results are still improving. The debate at the London Obstetrical Society last year, with its adverse verdict to this operation, has evidently told. A more important reason is probably the dislike of Anglo-Saxon gynecologists to pass through the ordeal of the mortality one necessarily has in a first series of such operations.

The last subject to which attention should be drawn is the greater importance now paid to the musculature of the pelvic floor. This is brought out by the increased notice paid to flap and scissors operations on the perineum, and to the methods of passing sutures so as to pick up and ensure muscular union as compared with the ordinary skin and mucous membrane healing. The results of massage in Prolapsus uteri are also remarkable, and no doubt the rationale of this method is to increase the tone of the levator ani and the minor perineal muscles so intimately connected with the perineal body.

2. Manual treatment of prolapsus uteri.

Profanter (*Wien. Braumüller*).—In this paper Profanter describes the manual method of treating Prolapsus uteri introduced by Brandt, a layman, of Stockholm. It is carried out as follows:—

(1) *Position of the patient.*—After the dress has been thoroughly loosened, the patient lies down on a couch four feet long, two feet eight inches broad, with a height the same as the gynecologist's chair. The shortness of the couch compels a thorough drawing up of the lower limbs, and as the upper part of the body is supported by cushions, the lowest part of the sacrum touches the couch, and the axis of the vagina and plane of uterus thus become more horizontal. The chin is brought as close to the sternum as possible, so that the abdominal muscles are thoroughly slackened and rendered passive.

The gynecologist sits on a stool at the patient's left side, passes his left index finger into the vagina, placing his right over the abdomen. It is recommended that the operator support the elbow of his left arm on his left knee. In all manipulations the internal finger remains at rest, *i.e.* as a point of resistance to the outer hand.

(2) *Method of elevating uterus.*—In this it is better to have an assistant, who sits on the patient's left as already described. The prolapsed uterus is first replaced, anteflexed, and then kept fixed by pressure on the anterior surface of the cervix. The uterus is mapped out by the assistant's right hand so as to indicate its position exactly. The operator now faces the patient, places his hands on the abdomen, and sinks them into the pelvis on either side between uterus and pelvis. The uterus is thus grasped by both hands and lifted up in the axis of the pelvis, sometimes as far as the navel. As the result of this manipulation the uterus becomes appreciably smaller from reduction of passive congestion.

(3) *Gymnastic of pelvis muscles.*—This is intended to strengthen the pelvic muscles, especially the levator ani.

In the dorsal posture the patient lifts up the hips, the body being supported on elbows and feet. The operator now lays hold of the closed knees and separates them, a movement resisted by the patient. This is done thrice, and then the patient brings the separated knees together, a movement resisted by the hands of the operator. This brings the adductors of the patient into strong contraction, and acts also on the pelvic muscles, bringing them into action. The patient can also, when in the dorsal posture, voluntarily cause contraction of the levator.

After the "knee separation" and "knee adduction" movements, the patient rests for ten minutes, and then assumes the ordinary dorsal posture with hips elevated, so as to reduce the pressure in the pelvis to a minimum.

(4) *Tapotement of the sacral region.*—This consists of a slow

tapping of the sacrum. One case is carefully recorded. It was one of well-marked prolapsus, cured permanently in one month.

3. Cure of prolapsus uteri by gymnastik of the pelvic musculature and methodical elevation of the uterus.

Prof. von Preuschen (*Centr. für Gynäk.*, March 31, 1888). Three additional cases (*Centr. für Gynäk.*, July 28, 1888). In both of these communications von Preuschen records successful cases. He attaches most importance to the action of the adductors as bringing about contractions of the levator ani.

4. On the use of the vaginal tampon in the treatment of certain effects following pelvic inflammation.

Emmet (*New York Med.*, Feb. 18, 1888) points out here that the hot douche is most valuable in acute inflammations. In the chronic stage, however, it is less useful, owing to the fact that the veins are matted, varicose, and dilated. In such cases it is almost impossible to inject the venous circulation of the pelvis *post mortem*. This condition of the veins is brought about by the chronic inflammatory condition of the tissues, by prolapse straightening the veins and allowing dilatation, and by loss of fascial support.

In such cases Emmet recommends the use of the vaginal tampon. It is to be made of ordinary (not absorbent) cotton wool, in pledgets the size of a walnut and smeared with vaseline. A piece of cotton wool the width and size of four fingers has its edges turned over so as to form a ball, and is then smeared with vaseline. In introducing these, Emmet recommends the genu-pectoral posture, and renews them daily. To remove them he recommends a piece of whalebone with a rough screw cut at one end (*Marion Sims*). During the menstrual period he substitutes a rubber ring for the tampon.

5. Removal of ovaries in cases of rudimentary development of Müller's ducts.

Strauch (*Ztsch. für Geburtshülfe*, Bd. xv. Hft. 1) here records two cases where he removed the functionally active ovaries in two women with mal-developed uteri. In both there were severe symptoms arising from vicarious menstruation. The result of castration was good in both.

The two cases given make up eight now recorded.

6. Removal of the uterine appendages and small ovarian tumours by vaginal section.

Byford (*Amer. Journ. of Obst.*, April, 1888) here advocates the vaginal operation for the removal of the uterine appendages and small ovarian tumours. For some time this method has been

abandoned in favour of abdominal section, and is not likely to come into much use, although one cannot speak with certainty on this point.

Byford operates with as strict antisepsis as possible, and opens into the peritoneal cavity by a longitudinal incision in the posterior fornix vaginae. The bleeding is trifling, and can be readily controlled by long, slender hæmostatic forceps. Drainage is used if necessary, and the tube removed in twenty-four to thirty hours. Special hæmostatic forceps and vaginal retractors are described, as well as a pair of slender forceps for grasping the ovary. Silk is used to ligature the appendages, and juniper cat-gut for the vaginal incisions.

In twelve cases there were no deaths.

This operation he does not consider suitable when there is fixation or when the ovaries are high up and bound down. In ovarian tumours the size must be taken into account. If larger than an orange and adherent, or larger than a child's head and not adherent, abdominal section is preferable.

In conclusion, Byford considers the usual arguments for and against this procedure.

7. Rotation of ovarian tumours; its etiology, pathology, diagnosis, and treatment.

Thornton (*Int. Journ. of Med. Sci.*, Oct., 1888) here discusses various interesting questions as to the rotation of ovarian tumours. The causation is admittedly obscure, and Mr. Thornton is unable to give any consistent explanation of this remarkable accident. He points out, however, some interesting facts in this connection, as shape and irregularity of tumours, the existence of menstruation and pregnancy, direct violence or strain, as well as circulatory disturbances from exposure to cold, are all shown in his tables to be predisposing causes.

In his table of fifty-seven cases of rotation in six hundred tumours, twenty-eight were right-sided, twenty-eight left sided, and one with both ovaries involved. In the case of right-sided tumours the twist is right to left; in left-sided ones, left to right. As to diagnosis, it is pointed out that any sudden attack of pain in the ovarian region should lead to examination, when the twisted pedicle may be felt. Sudden increase in size of tumour, signs of internal hæmorrhage, and peritonitis, are important. As the result of the twist we get congestion of the tumour, perhaps hæmorrhage, then peritonitis with adhesions; and, as the adhesions give a collateral blood supply, gradual amelioration of the serious symptoms.

Mr. Thornton urges immediate early operation. If the

peritonitis be acute, he prefers delay until it subside, unless there is dangerous intraperitoneal or intracystic hæmorrhage. Mr. Thornton is convinced "that operation during acute peritonitis is very dangerous, whereas in the subacute or chronic stage, the patient bears operation as well or better than with a perfectly healthy peritoneum." In the fifty-seven cases operated on, four died (7·01 per cent.).

8. Pyosalpinx and its operative treatment.

Gusserow (*Arch. f. Gyn.*, Bd. 32, Hft. 2) gives in this article an account of thirty-one cases of pyosalpinx operated on by him during the last three years. In ten of these cases both tubes were removed.

By the term pyosalpinx he understands a closed sac filled with pus and adherent to neighbouring organs; and his present cases consist only of such.

Of the thirty-one cases operated on, only one died, a mortality of 3·2 per cent.

The following cases give an idea of the symptoms and physical condition of pyosalpinx.

CASE 2.—W., forty-one years of age, has had four children. Menstruation has always been painful, and of late there has been occasional irregular hæmorrhages with continuous pain in the left and lower part of the abdomen. Behind and to the left of the uterus is a tumour the size of the fist and movable with the uterus. On operation it was found to be the left tube dilated and filled with pus. It was so adherent to the uterus that part of the latter was removed with it (the fundus in the original, but this term gives no precise idea of the amount taken away). Patient cured in four and a half weeks.

CASE 20.—S., thirty-two years of age, unmarried, became ill a year and a half before admission, with greenish-yellow discharge from the genitals, pains in the lower part of the body and on making water. The pain was continuous, and worse at the unwell time. The uterus was normally anteflexed, and in the pouch of Douglas a very movable tumour about the size of a walnut could be felt, as well as a sausage-shaped cord running to the right angle of the uterus. On abdominal section the tumour was found to be the enlarged ovary and right tube filled with pus. Pus passed into the abdominal cavity during ligature. The left tube was found filled with blood, and removed also. Recovery complete.

CASE 26.—M. M., twenty-five years of age. Has never had children. Two years ago had severe perimetritis, and since that time the period has been painful. On examination a tumour was

found on each side of the slightly enlarged uterus, each tumour filling about half of the pelvis. On operation the right-sided tumour was found to be the tube filled with pus. It was removed with difficulty from the broad ligament, and during the shelling out and ligature pus escaped into the peritoneal cavity. The left tube was more easily managed, but it collapsed during manipulation, and pus escaped into the abdominal cavity. The patient died on the fourth day from septic peritonitis.

In discussing his cases, Gusserow attaches importance to the perimetritis as the origin of the pyosalpinx. So far as the presence of gonococci in the pus is concerned, examination was always negative. He therefore believes that uterine catarrh spread to the tubes and thence to the peritoneum, where it set up perimetritis with subsequent adhesions, closure of the abdominal end of the tube, and accumulation of pus. The fact that the pyosalpinx is seldom double (9 in 31) points to the tubal catarrh being primary. Were the perimetritis primary, one would expect double pyosalpinx more frequently. The ovaries were, without exception, also involved, and required removal.

Gusserow next considers the etiology and symptomatology of pyosalpinx. As the perimetritis passes off, the tubal conditions and the symptoms it gives rise to come more into prominence. These are chiefly abnormal sensations and pains in the pelvis, relieved by rest and aggravated by motion or work. The condition is most common among the poor, as it is evident that the better classes are less exposed to gonorrhœal infection, danger after abortions, and want of care during menstruation. Then, further, when perimetritis arises, the lower classes have less opportunity of treatment. When once established, the occurrence of menstruation aggravates the condition, and new attacks come on. There is no special symptomatology for pyosalpinx, as dysmenorrhœa and menorrhagia may arise from perimetritis alone. So long as the pyosalpinx exists will the perimetritis be kept up and aggravated. The patient with pyosalpinx runs great risk of rupture and death from general peritonitis. The danger arising from pus passing into the peritoneum during operation has been greatly overrated, as this happened eighteen times in the thirty-one operations, and in only one with a fatal result. In all the others there was no harm done. When pus so escaped, it was most carefully removed with sublimated sponges, and it is possible that in the fatal case some antiseptic precaution was omitted.

Gusserow finally points out the advantage of a small abdominal incision in preventing hernia, and also the risk of parametritis following the operation, as well as of persistence of the original

perimetritis. In most of the cases, however, the exudation disappeared.

9. Intraligamentary ovarian cysts.

Goodell (*Amer. Journ. of Obst.*, January, 1888) here treats specially of the intraligamentary ovarian cyst originating in the broad ligament from traces of the Wolffian bodies, and developing extraperitoneally. From its method of growth it displaces the bladder, uterus, and peritoneum extensively. While really extraperitoneal, the upper portion may penetrate the anterior lamina of the broad ligament and become intraperitoneal. The deep development of the tumour into the connective tissue uncovers and displaces the ureters. There is, of course, no pedicle.

In operating on such, care must be taken on making the abdominal incision not to injure the bladder, the sound being passed into the bladder by an assistant, so as to map it out. When exposed, it should be tapped, the cyst dragged on by forceps, and an artificial pedicle formed of the portion of the capsule lying between the sac and the uterus. This can rarely be done, however, and enucleation must therefore be performed as follows: After emptying the sac, lift it out of the abdomen as much as possible, and then incise its peritoneal covering on a line with the edges of the abdominal incision. The vessels enter laterally and at the uterine edge; these should be tied first, so as to limit hemorrhage. The rest of the cyst is then separated with fingers and scissors, without injuring the capsule, as far as possible. Many vessels will require clamping or ligature. When the tumour is thus shelled out, a large cavity is left, whose edges may be stitched to the abdominal wound, cut off in this way from the peritoneal cavity, and drained. German operators recommend drainage of the extraperitoneal cavity through the vagina, and the closure of the opening of the peritoneal investment of the tumour with catgut. This is difficult, especially if much patching of the peritoneum is required.

10. On wound of the bladder during laparotomy.

Sänger (*Arch. für Gynäk.*, Bd. xxii. Hft. 3) here records an account of a remarkable case of injury to the bladder during laparotomy. The case was one of cystic fibro-sarcoma of the right ovary with many adhesions, the result of previous torsion of the pedicle. The thin pedicle was considered an adhesion, and adhesions involving the bladder considered the pedicle. This latter was ligatured accordingly in three parts, with silk, and when cut it was noted that a piece of the bladder as large as the palm of the hand had been removed. This was treated as follows:—The stump was brought down to the lower angle of the abdominal

wound, and the parietal peritoneum stitched beneath it. It was then fixed between the edges of the incision by transverse ligatures, and the stump ligatures drawn through an opening in the incision, where a glass drainage tube was, and the abdominal incision closed over it. Säger evidently means that the stump, with bladder, etc., was made to lie between the edges of the abdominal wound, and cut off from the peritoneal cavity. It there formed adhesions and became organised, the silk ligatures coming away in a few weeks. No fistula formed, the mucous membrane of the bladder having retracted. The catheter was used for the first three days, and then drainage of the bladder for eight days.

11. On vaginal hysterectomy for cancer, with notes of six cases.

Dr. Sinclair (*Med. Chronicle*, Feb., 1888) here records six cases where he performed vaginal hysterectomy for carcinoma cervicis uteri. In his first case he operated by incising the anterior fornix without cutting into the vesico-uterine pouch. The next steps were to open into Douglas' pouch, forcibly retrovert the uterus, ligature the broad ligaments, and finally, after separating the cervix completely in front, to cut the uterus away. The retroversion of the uterus was found very difficult, and the patient died in twenty hours. In his second case, he operated according to Fritsch's method, where the lateral attachments are ligatured as cut, the bladder separated, the uterus drawn through the anterior fornix, and the pouch of Douglas thus cut from within out. This case also died, and on *post mortem* the left ureter was found ligatured, and an abscess had also formed behind the right ovary. The third case was an incomplete operation.

The fourth, fifth, and six cases were operated on without the version of the uterus as in the first two cases. The uterus was drawn well down, the anterior fornix incised, and silk ligatures tied as necessary. In dealing with the parametrium, silk ligatures were passed close to the uterus through the tissue before it was cut, and thus hæmorrhage and all risk to the ureter prevented. Douglas' pouch was opened, and the broad ligament treated in the same way as the parametrium. These three cases recovered.

The following list of German operators, showing an average mortality of 15 per cent, is of interest :—

	Operations.		Deaths.
Fritsch	...	60	7
Leopold	...	42	4
Olshausen	...	47	12
Schroeder and Hofmeier	...	74	12
Stanze	...	22	1
A. Martin	...	66	11
		<hr/> 311	<hr/> 47

12. Vaginal hysterectomy.

Purcell (*Brit. Gynec. Journ.*, Feb., 1888). In four cases the subsequent history has been as follows:—Case 1. Death and recurrence ten and a-half months afterwards. Case 2. Alive and free from return two years after. Case 3. Died in six months with recurrence. Case 4. Alive four and a half months afterwards, but with recurrence.

13. On the supravaginal amputation of the cervix uteri for malignant disease, with notes of ten cases.

Lewers (*Lancet*, March 10, 1888) operates as follows:—The uterus is drawn down by a strong hook passed into the cervical canal so as to take a grip of healthy tissue. The cervix is next separated from the bladder by blunt-pointed, slightly curved scissors. The same is done behind the cervix, the peritoneum being stripped up, although it may be opened without any danger, as is now so well known. In cutting through the lateral attachments of the cervix, silk ligatures were applied first with an aneurism needle. Another way is to clamp the parametric tissue with Wells' forceps, and then cut. In this way the cervix is cleared all round, and only requires to be cut transversely above the level of the disease. The anterior portion of the cervix, finally, is stitched to the anterior vaginal wall, the posterior portion to the posterior vaginal wall.

There was no immediate mortality, but in three cases the disease had recurred in from six to twelve months.

[It is now generally held that in supravaginal amputation the immediate mortality is slight, but recurrence is quicker than when the whole uterus is removed.]

14. Cancer of the cervix: total hysterectomy with the aid of clamp forceps.

Muleur (*Nouv. Arch. d'Obstet. et de Gynecologie*, Aug., 1887).

15. Vaginal hysterectomy in France.

Gomet (*Revue de Chirurgie*, 1887).

16. Vaginal hysterectomy.

Richelot (*Nouv. Arch. d'Obstet. et de Gynecologie*).

17. Medical treatment of cancer of the uterus.

Cordes (Geneva, *Annales de Gynecologie*, Oct., 1887).

These papers show that more attention is being paid to this subject in France than in Great Britain. French operators prefer arrest of hæmorrhage by leaving on forceps (Wells and Richelot's method). Mortality is high (one in three), but better than in England.

18. The treatment of uterine cancer.

Landau (*Berliner klin. Wochen.*, March 5, 1888) here gives an

account of nine cases where he removed the uterus by vaginal hysterectomy, in seven the uterus being cancerous. He operated according to Richelot, i.e. all cut tissue was clamped with forceps, as many as twenty pairs being required, and these left on for forty-eight hours. All had recovered.

19. On a new treatment by electricity of periuterine inflammation (perimetritis, parametritis, phlegmon, cellulitis).

Apostoli (*Brit. Med. Journ.*, Nov. 19, 1887). In acute inflammations as defined above, Apostoli recommends faradisation, beginning with a vaginal application, and avoiding pain. One or two sittings a day are employed, each sitting lasting fifteen to twenty-five minutes. In the subacute stage he passes the electrode into the uterus, using internal faradisation.

The wire of the secondary coil must be thin, and the coil must be advanced slowly till it reaches the proper limit of tolerance. The galvanic current is also to be used, with mild strengths (20 to 40 milliampères), and *séances* of three or four minutes. The positive pole is to be preferred. In the chronic stage the galvanic current must be pushed markedly, puncture being employed with a strength of 50 to 250 milliampères; the punctures must be shallow, and strict antisepticism is imperative.

20. Notes of a case of hydrosalpinx; a new mode of electrical treatment.

Apostoli (*Brit. Med. Journ.*, May 12, 1888). This case is recorded by Apostoli as a new means of treating hydrosalpinx.

The patient had a neglected abortion, and a month afterwards had threatening of pelvic peritonitis. On examination there was exudation round the uterus, bulging down into the posterior and lateral fornices, most marked on the right side. The temperature was 38.5° C., so that Apostoli had no doubt as to the existence of periuterine suppuration. He therefore adopted negative galvanopuncture, passing a fine steel trocar for 1 cm., using current strength of 100 ma. for five minutes. About twelve days after, this was again done; depth of puncture 1½ cm., current strength 140 ma. Three days afterwards, clear fluid in large amount came from the vagina, and the patient after this progressed rapidly. In about two and a half months the uterus was found on examination to be retroverted and fixed; patient otherwise well. Apostoli's conclusions are as follows:

1. In gynecology, fever and inflammation do not absolutely contra-indicate the use of the galvanic current.

2. Uterine and tubal inflammations may be advantageously treated by galvanism in the early stages, but not during the *suppurative*.

3. Galvano-caustic puncture may check the outbreak of inflammation, stop its progress, or by mere puncture evacuate fluid.

4 and 5. Every inflammatory exudation in the peritoneal pouches, as well as certain cases of tubal affections, may be treated by galvano-puncture.

6. Two negative galvano-punctures, vaginal only, were sufficient in one case of hydrosalpinx to bring about very quickly an important anatomical change and complete symptomatic cure.

[Apostoli gives no evidence here of the existence of hydrosalpinx. His own record points directly to the case being one of serous pelvic peritonitis (serous perimetritis), with spontaneous escape of fluid, as often happens. The good influence of electro-puncture seems to me to have been very doubtful.]

21. On some novelties in my electrical treatment of uterine fibroids, with answers to objections.

Apostoli (Brit. Med. Assoc. Glasgow Meeting, August, 1888; *pamphlet*). In the first part of his paper Apostoli answers many objections raised to his method; these we pass over, and take up the fresh suggestions as to it he makes. In the relief of pain either in the early growth of fibroids or from inflammatory conditions, Apostoli strongly recommends faradisation (interrupted current). He has also found many cases of painful fibroid put at ease by negative galvano-puncture; and in certain cases where this failed he tried positive galvano-punctures with such success that he has now "great confidence in these positive punctures for fibroids, especially when we encounter persistent pains." For the positive galvano-puncture, fine gold needles had to be used, as steel ones oxidised, and not only became useless, but, along with the char they produced, increased the resistance greatly. To disinfect the gold needle, carbolic acid must be used, as corrosive sublimate destroys it.

In *hæmorrhage* cases, Apostoli points out that we may have *irregular or insufficient* cauterisation. To overcome irregular cauterisation he proposes to inject "gelosine"* into the uterine cavity and use gas carbon electrodes as the intra-uterine electrode. The gelosine is a good conductor, and can be sterilised, and as Apostoli supposes he can fill the uterine cavity with it, cauterisation is made uniform. To ensure *sufficient* cauterisation it is recommended to have the intra-uterine electrode insulated except for the last inch ($2\frac{1}{2}$ cm.). He uses a metallic instrument with a

* Gelosine is the mucilaginous principle recently extracted by M. R. Guerin, chemist, of Paris, from the gelose of the *Gelidium corneum*, a seaweed of Japan found in abundance at Singapore.

carbon electrode one inch in length. The metal is insulated with indiarubber, and is graduated in inches. In this way, by passing the instrument, turning on the current, and then gradually withdrawing it inch by inch, the amount of cauterisation desired is effected. It should be remembered that the cervix is sensitive to the current.

22. Electricity in gynecology.

Bunts (*New York Med. Record*, July 21, 1888) here explains the ordinary terminology needed in gynecological electrolysis. He recommends electrolysis in cervical stenosis, and uses a current strength of 20 to 60 ma.

23. The electrotherapy of uterine disease.

Benedikt (*Berl. klin. Wochens.*, No. 30, 1888) complains that for the last twenty years he had in vain endeavoured to interest Vienna gynecologists in the application of electricity to gynecology, although Tripier's work was published in 1860. He next briefly describes the improvements introduced by Apostoli, and believes in high-current strengths, even to 300 ma. He records a case of fibroid much benefited by electrolysis, and thinks that electrical treatment of ovarian tumours will also give good results. He also believes in reversing the current; and points out that if the needle (positive) be caught in the tissue, reversal, thus making it negative, will free it.

24. Electricity in gynecology.

Engelmann (*St. Louis, U.S.A., Zeitsch. f. Geburtshülfe*, Bd. xv, Hft. 1) has here brought before German gynecologists his opinions on the applications of electricity to gynecology. These are well-known now, owing to his paper in the "American Gynecological Transactions" for 1886, and show him to be an enthusiastic follower of Apostoli. In the first part of his paper he goes over the now well-known method of Apostoli, which we need not at present abstract.

In conclusion he gives his results briefly as follows: These have been good in inflammatory exudations, fibro-myoma uteri, stenoses, and dysmenorrhœa. His most brilliant results have been obtained in atresia and stenosis (of cervix), in endometritis, metritis, and perimetritis.

In the discussions Bröse spoke as follows: He had used the galvanic current in gynecology, but in a different way from Engelmann, and he also explained its action differently. The highest current strength used by Bröse was 20 milliampères, as compared with 200 of Engelmann. Bröse did not hold the chemical electrolytic idea of its action, but rather believed uterine contractions to be the cause of his results. Bröse uses a copper

sound insulated with indiarubber as the internal electrode, a broad electrode over the abdominal walls, and allowed the application to go on eight to ten minutes every second day.

In his first case of fibroid he had an excellent result, viz. diminution of tumour, disappearance of pain and irregular hæmorrhages. In fifteen months the tumour had again increased, and former symptoms returned; they yielded, however, to further applications. In his third case, where the uterus was the size of a four-months' pregnancy, the patient suffering from dysmenorrhœa and menorrhagia, the result was serious, as, although he only used mild currents ($1\frac{1}{2}$ to 10 milliampères), the fibroid was driven down in a sloughing condition; and despite energetic antiseptics, the patient died from septic peritonitis. In the second case the result was not specially good; and in a fourth, no good followed. Bröse believes uterine contraction to be set up by the current, and that it was not without danger, as his third case showed.

25. Results of supravaginal hysterectomy, with remarks on the old ways and the new of treating uterine fibroids.

Keith (*Brit. Med.*, Dec. 10, 1887).—In this valuable paper Dr. Thomas Keith gives his ripened experience in regard to hysterectomy and oophorectomy for fibroids; enucleation of fibroids; as well as his recent experience of Apostoli's method.

Supravaginal hysterectomy.—Dr. Keith gives here his completed series of such, sixty-four in all. Up till 1884 his mortality was 7·9 per cent.; over all his cases, 15·7. In his present series (cases 39 to 64) all the fatal cases were hospital ones. Dr. Keith found his wards unhealthy after three years' work in them: erysipelas then broke out, and pneumonia appeared three times, so that the mortality rose from $2\frac{1}{2}$ per cent. to $5\frac{1}{2}$. The only fatal case in private practice was one, advised against, from diabetic coma. In regard to method, Dr. Keith believes that the best results will be got from the intraperitoneal treatment of the pedicle with the ligature. It is worthy of note that in all the fatal cases the operation was begun with the intention of removing the ovaries only, and that, owing to hæmorrhage, there was nothing for it but to do hysterectomy. He now urges that when one cannot find the ovaries the abdomen should be closed. His conclusions on this head are:—"I say it deliberately, hysterectomy is an operation that has done more harm than good, and its mortality is out of all proportion to the benefits received by the few. . . . I put it (the mortality) at 25 per cent. . . . We have no right to rush our patients into such a fearful risk, yet this is done every day."

As to removal of the ovaries for the cure of fibroids, Dr. Keith has found it perfect when entire removal was accomplished. Imperfect removal means failure.

Contrary to general opinion Dr. Keith has found enucleation give him the smallest mortality of all methods for the relief of fibroids. At the same time he considers it the most difficult of operations, with a secret in doing it, necessitating experience in vaginal operations and rigid antisepsis.

Dr. Keith believes the success of Apostoli's treatment to be a great fact, and accepts his teachings *toto animo*. In five months he has, along with his son, made 1,200 applications in 100 cases, chiefly of fibroids. Several of these have escaped hysterectomy or oophorectomy, have gone home with menstruation almost normal, the tumours reduced in size, and with freedom to walk about and enjoy themselves. Dr. Keith closes his paper thus:—"So strongly do I now feel on this subject, that I would consider myself guilty of a criminal act were I to advise any patient to run the risk of her life—and such a risk—before having given a fair chance to this treatment, even were I sure that the mortality would not be greater than that which hysterectomy has given me in my private cases—under 4 per cent."

26. The treatment of fibroid tumours of the uterus by electricity.

Mr. Keith (*Edin. Med. Journ.*, Feb., 1888) here records six cases of fibro myoma uteri where benefit resulted from Apostoli's method:—

CASE 1.—Miss H., aged 47; tumour extended far up beneath ribs, cervix could not be reached on vaginal examination; bladder in abdomen. Negative puncture, with current strength 200 milliampères used. After the thirteenth puncture the tumour could be felt free of the ribs, and had lost about 10lbs. to 12lbs.

CASE 2.—Fibroid filling almost whole of pelvis; uterine cavity measured $4\frac{1}{2}$ inches. Fourteen negative applications and two negative punctures reduced cavity of uterus to $3\frac{1}{2}$ inches, and fibroid to size of a somewhat enlarged ovary.

CASE 3.—Aged 57; tumour filled pelvis, and caused great bladder irritation. Twenty-three negative applications reduced the tumour by one-half. The tumour increased decidedly afterwards, as the result of a chill.

CASE 4.—Aged 50; had suffered greatly from tumour for twenty years. Outline irregular, but reached the umbilicus on right side, higher on left, and extended into loin. Twenty-three applications of 100 to 200 milliampères were made. "From a delicate, miserable creature she had been transformed into a fine,

handsome woman." "The tumour did not extend more than two inches above the pubes on the right. The mass which had been in the loin did not reach outwards as far as the anterior iliac spine, and was not higher than the umbilicus."

Cases 5 and 6 give similar good results.

27. Electricity in the treatment of uterine and other pelvic diseases.

Mayo Robson (*Lancet*, Aug. 25, 1888) writes with approval of the use of electrolysis in menorrhagia and dysmenorrhœa. In one case of profuse menorrhagia associated with gonorrhœal endometritis and left salpingitis, three applications of electrolysis cured her (current strength, 100 to 150 milliamperes; positive pole internal; duration 10 minutes).

28. Enucleation by electrolysis of a large fibroid.

Dr. Holland (*Brit. Med. Jour.*, Jan. 7, 1888), in this case, applied electricity to a bleeding fibroid, the uterine cavity measuring $4\frac{1}{2}$ inches, with fundus at level of umbilicus. The negative electrode was placed in the uterine cavity, eight applications were employed, and the current strength, beginning at 50 ma., was ultimately increased to 300 ma. Pain, fetid discharge, and rigors began after the last application, and ultimately two large sloughing fibroids were expelled, the second mass tightly distending the vagina. The temperature after the second expulsion was 104° , but the patient ultimately recovered. Duration of treatment, 55 days; antiseptic douches and antipyretics were freely used.

[This must be reckoned an untoward result, as the patient ran considerable risk.]

29. Remarks on the electrical treatment of diseases of the uterus.

Sir Spencer Wells (*Brit. Med.*, May 5, 1888) points out specially the advances in electrolysis, due mainly to Apostoli, whose work and results he tested by a personal visit in 1886. These he classifies as follows:—

1. The double action of the galvanic current, viz. the *local* and *interpolar*. In the local action we get cauterisation or decomposition according to the pole used, the positive pole setting free acids, the negative alkalis. In the interpolar action we get important trophic changes, influencing nerves and vessels.

2. Apostoli more distinctly emphasised the coagulating action of the positive pole, from its producing a dry scar, and the decomposing or liquefying action of the negative pole from the alkali set free. Thus the positive pole is the antihæmorrhagic; the negative, the denutritive or hæmorrhagic one. The former is to be used in bleeding fibroids; the latter by puncture mainly, where we

wish to diminish a fibroid inconvenient or dangerous from its bulk.

3. Sir Spencer Wells here alludes to Apostoli's improvements in the use of the dispersing electrode of potter's clay, to his employment of currents of high intensity, and to his measuring the current-strength of these by a galvanometer.

Several other points of scientific interest, not quite suitable for reproduction here, are discussed, and it is finally pointed out that there seems a field for the employment of electrolysis in chronic metritis and diseases of the uterine appendages.

30. Some remarks on the use of electricity in gynecology.

Dr. W. S. Playfair (*Lancet*, July 21 and 28, 1888) has employed Apostoli's method in the following classes of cases.

1. As a hæmostatic in bleeding fibroids. In eighteen cases there was only one with no good result. Arrest of hæmorrhage and sometimes shrinking of the tumour was observed. The positive pole was, of course, the internal one, and the strength of the current usually 80 to 200 milliampères. For this class of case Playfair thinks highly of electrolysis.

He considers it less promising in non-hæmorrhagic fibromyomata, as well as more dangerous, inasmuch as one has to use puncture with the negative pole. He has used it in two cases of incarcerated fibroid: in one with a result "so far satisfactory;" in the second, there was much constitutional disturbance, although the tumour almost disappeared. Strength of current usually 50 to 150 milliampères.

In dysmenorrhœa dependent on stenosis of cervical canal, and in membranous dysmenorrhœa, Playfair has had good results. The electro-negative pole was used internally, the current strength was usually 10 to 100 milliampères, and the number of applications two to ten.

31. A liquid rheostat.

Murray (*Brit. Med. Journ.*, July 21, 1888). This is a simple and convenient form of rheostat, which enables one to increase the current strength without perceptible jar to the patient. The solution used in the glass tubes is sulphate of copper (saturated) to eight of water.

The following papers have also been published on this subject:

32. The electrolysis of fibroids.

Steavenson, W. E. (*Brit. Med.*, May 12, 1888).

33. On electrolysis.

Bantock (*Brit. Gynec. Journ.*, August, 1888).

34. On the action of the constant current on fibroid tumours.

Parsons (*Brit. Gynec. Journ.*, May, 1888).

35. On the treatment of fibroid tumours of the uterus by electricity.

Apostoli (*Brit. Med. Journ.*, Oct. 1, 1887).

36. On the treatment of fibroid tumours of the uterus by electricity.

Steavenson (*Brit. Med. Journ.*, Oct. 1, 1887).

These last two papers give an account of the methods and instruments necessary for Apostoli's treatment.

37. Case of uterine fibroid treated by Apostoli's method. Enucleation of the tumour.

Jacobs (*Amer. Journ. of Obst.*).

There are also papers by Gehring (Aug., 1888), Werner (April, 1888), and Scott (March, 1888), in the same journal.

38. The use of the curette for the relief of hæmorrhage due to uterine fibroids.

Coe (*New York Med. Record*, Jan. 28, 1888) here draws attention to a fact in pathology too often forgotten, viz. that in the menorrhagia of fibroids the bleeding comes from the hypertrophied mucous membrane and not from the tumour. He therefore recommends curetting as a palliative. His conclusions are as follows :

1. The hæmorrhage comes from the hypertrophied mucous membrane.
2. Bleeding is proportionate directly to the extent of the mucous membrane, and not to the size of the tumour.
3. The menorrhagia may be diminished by repeated curetting of the hypertrophied mucous membrane.
4. This curetting is palliative, but may enable the patient to tide over to the menopause.

39. The treatment of hæmorrhage in fibromyomata by Hydrastis Canadensis.

Rutherford (*Brit. Med. Journ.*, July 21, 1888) has had satisfactory results with tincture of Hydrastis Canadensis in the menorrhagia of fibroids so far as checking or limiting the hæmorrhage is concerned. He used the tincture (m. xv to ʒi.) invariably, and found it also improve digestion and act as a tonic.

40. The operative treatment of retroflexed uterus (retroversio-flexio).

Sänger (*Centr. für Gynäk.*, Jan. 14, 1888) states that about twenty per cent. of backward displacements of the uterus do not yield to ordinary mechanical treatment. For such the question of operation must be considered—an operation free from danger, certain in its result, and one that brings about a physiological condition of parts. At present we have no procedure fulfilling these conditions. The known operative methods may be classified as follows :—

I. *Indirect.*

- (a) Repair of perineal defects, prolapses of vagina and uterus.
- (b) Suture of deep cervical lacerations.
- (c) Wedge-shaped excision and amputation of *portio vaginalis*.
- (d) Removal of tumours by laparotomy from the retroflexed uterus.
- (e) Castration.

II. *Direct.*

- (a) Excision of the anterior portion of the cervix. This really causes a cicatrix, bringing about retroversion.
- (b) The Alquié-Alexander operation (usually termed the Alexander-Adams operation in this country).
- (c) Treatment by laparotomy and ventral fixation.

Sänger considers the last-mentioned treatment fully. Its history goes back to 1877, when Koeberlé, in a castration case, fixed the ligatures in the abdominal wound, and Müller (1878) and Schultze (1881) made the same proposal in otherwise intractable cases. Lawson Tait (1880), Hennig (1881), and others have modified Koeberlé's method. One of the most important contributions has been by Kelly, of Philadelphia, who terms the operation "Hysterorrhaphy." Sängér considers the nomenclature unsatisfactory, but uses the term "*Ventro-fixatio uteri*." This may be done as follows:—

(1) Castration and suture of both stumps in the abdominal wound (Koeberlé, C. Hennig).

(2) Ovariectomy, or castration and suture of one stump in the abdominal wound (Olshausen, Sängér).

(3) Castration and suture of fundus uteri to abdominal wound. By a suture (Tait), two cases; by several chromic acid gut sutures (Czerny), one case.

(4) Castration and suture of one stump to abdominal wound (H. A. Kelly).

(5) Castration and suture of both stumps.

(6) Suture of round and broad ligaments to abdominal wall without castration (Sängér)—simple ventro-fixation of uterus.

Sängér has operated seven times—twice as in 2, thrice as in 5, and twice as in 6. They are briefly as follows:—

CASE 1.—L——, 28 years of age, had left appendage removed for prolapsus of ovary, on Nov. 4, 1885. On May 7, 1886, right appendage removed for similar conditions, although it was normal at the time of the previous operation. The retroversion of the

uterus from chronic metritis was at the second operation fixed to the lower angle of the wound by two silver sutures passed through the right stump. For the first two days there was vesical tenesmus, and a stitch abscess also developed. Ultimately the uterus remained anteverted without pessary.

CASE 2.—S——, 28 years of age, had been infected with gonorrhœa, had endometritis and repeated pelvic peritonitic attacks. Retroflexion of the uterus had been treated by pessaries without any result, and therefore castration and fixation of right stump in abdominal incision. Uterus remained anteverted without pessary.

CASE 3.—S——, 28 years of age, seven years married, and sterile. Had both appendages diseased, pelvic peritonitis (adhesive), fixed retroflexion, and hysteria. Appendages removed with difficulty. The uterus was freed, the stumps were drawn forward by means of the ligatures, and two silkworm sutures passed from the point of separation round ligament and tube to the abdominal wound, which they entered about 4 cm. above the symphysis and 2 cm. to the outside of the incision. It was found, after the wound was closed, that part of the descending colon had slipped in between the bladder and uterus. The left-side sutures were therefore untied, and the left uterus angle fastened again so as to lie lower and more to the outside. There was no urinary disturbance, as in the two cases already recorded.

The final result was good; uterus atrophic and anteverted. Cases 4 and 5 were much the same as case 3. In case 4, intestine was found to slip in between bladder and uterus, so that the sutures required tightening.

CASE 6.—This was a severe case, with marked hysterical symptoms, and varied forms of treatment had been tried without benefit. The following operation was performed:—On each side, after making the abdominal incision, three silkworm sutures were passed from the round ligament and anterior lamella of the broad ligament, and through the recti muscle of the abdominal wall, about 2 cm. from the edge. These were knotted, after all the stitches had been passed, so that the position of the uterus could be ascertained definitely, and note taken that there was no risk of incarceration of intestine between uterus and bladder.

The final result in this case was good.

CASE 7.—In this case, Alexander's operation had been already performed without benefit. The uterus could be palpated out with great facility; but on section, the fundus was found overlaid by small intestines. This fact shows that Caneva's proposal to

suture the uterus to the abdominal wall without previously performing laparotomy is not practicable.

Operation as in case 6 was performed with benefit.

In cases 1 to 5 ventro-fixation of the uterus was performed along with castration, and he recommends ventro-fixation in castration cases when the uterus is retroflexed although unfixed.

41. Suture of the retroflexed uterus to the anterior abdominal wall.

Leopold (*Centr. für Gynäk.*, March 17, 1888) gives an account of three cases where he operated so as to fix the retroflexed uterus to the anterior abdominal wall. In each of his cases about a year has elapsed since operation, so that some conclusion as to its value can be arrived at. In all of them routine treatment had failed.

CASE 1.—Retroflexion and perimetritis; laparotomy, Nov. 27, 1886. Abdominal incision from umbilicus to pubes; hand passed in and uterus lifted up. The first suture (silk) was passed through the left edge of the abdominal incision, and then beneath the left round ligament. The second suture, one centimetre, above the first, passed from abdominal incision (left side) beneath the peritoneum and the fundus, a little in front of its junction with the tube; then beneath the muscular fibre for about 2 cm., when it was carried on to the right edge of the abdominal incision.

The third suture was passed like the second, except that it entered the fundus behind the tube. The peritoneum of the fundus between the stitches was scraped slightly with the knife so as to ensure union with the abdominal wall.

Feb., 1888. Result good.

Cases 2 and 3 are similar, except that there were posterior adhesions, and the first suture did not include the round ligament. In case 2 the left appendage was removed, and in case 3 both.

In all there has been no bladder disturbance, and no subsequent treatment needed.

42. On ventral fixation of the uterus for intractable prolapse.

Phillips (*Lancet*, Oct. 20, 1888).—This was a case of intractable prolapse, where, on abdominal section, the right ovary was found to be as large as a Tangerine orange. It was removed, and the pedicle fastened to the abdominal wall by silkworm sutures, afterwards removed. Result good.

43. The primary and definite results of operations for prolapse.

Cohn (*Zeitsch. f. Geburt. Gynäk.*, Bd. xiv. Hft. 2) has gone

carefully into the primary results of 105 cases of prolapse operations. In 80 of these 105 only was he able to get ultimate results. He sums up his conclusions as follows:—

1. The continuous catgut suture gives surest guarantee for primary union, and is easily and quickly performed.

2. Colpoperineorrhaphy can cure large prolapsus.

The fact that only half of the cases examined were fully healed depends on the following facts:—

(a) Some of the so-called recurrence cases were really cases where union had been imperfect.

(b) In some of the recurrence cases the operation was imperfect, only anterior colporrhaphy having been performed.

(c) Some of the recurrence cases are explained by severe work, early pregnancy, and special anatomical relations of the posterior vaginal walls.

Cohn recommends, therefore, early operation, high colporrhaphy of the posterior vaginal wall. "The higher the perineum, the stronger the pelvic floor; the farther the anterior vaginal wall is carried forward, *ceteris paribus*, the more favourable are the prospects of definite healing.

Of 88 hospital cases, 65 healed well; of 17 private cases, 15 had good union. In 40 cases of good union there were 10 of recurrence. This is the important fact in this paper, but several other points of less importance for our present purpose are gone into. Cohn recommends Thiersch's juniper-glycerine-catgut, prepared as follows:—"Raw catgut is placed in juniper oil for twenty-four hours, and then for the same time in glycerine. It is then preserved in absolute alcohol with slight excess of juniper oil."

[Cohn seems to me to speak too confidently of the value of posterior colporrhaphy. The tendency of operators now is to get muscular union, forming flaps for cutting more deeply, and avoiding the passing of sutures through skin.]

44. Perineorrhaphy by splitting the recto-vaginal septum and formation of flaps.

Sänger (*Volkemann's Sammlung*, No. 301).

45. Perineoplastic.

Zweifel (*Arch. f. Gynäk.*, Bd. 32, Hft. 3.)

46. Note on the principle of flap-splitting in plastic operations; a recognition of priority on the part of the late Maurice Collis.

Tait (*Dub. Jour. of Med. Sci.*, May, 1888).

These papers are too technical for abstract here, and, in addition, require a large amount of illustration. We may point out, however, the principles brought forward:—

In repairing a torn perineum for the cure of prolapse, the usual idea, as expressed in Cohn's paper, is to unite skin, mucous membrane, and connective tissue. The work, however, of Prof. Russell Simpson has developed a flap operation; and Prof. Lawson Tait, by the use of scissors and the passage of sutures so as not to include skin, has, it seems to me, enabled the operator not only to operate rapidly, but also to get muscular union. This enables the pelvic floor muscle to brace up the displaced parts of the pelvic floor in prolapsus uteri, and is of paramount importance in those cases where the anal sphincters have been torn.

47. The value of "Alexander's operation" in cases of complete procidentia of the womb.

Lee (*New York Med. Jour.*, March 3, 1888) believes in this operation for complete prolapsus uteri. In some cases he also did anterior and posterior colporrhaphy. In fixing the round ligaments he passes the sutures through the periosteum of the pubic spine. One of his cases had a bad convalescence, there being great prostration, with some septicæmia. Recovery took place.

48. On incontinence of urine.

Dr. Alexander (*Brit. Gynec. Jour.*, Aug., 1888), in a case of incontinence of urine from loss of sphincter power, freed the urethra in front and at the sides, stitched it into the rectum, and closed the vulva. In this way the urine passed into the rectum, and was discharged as often as necessary *per anum*. Urine can be retained for three or four hours.

MIDWIFERY.

BY GEORGE ERNEST HERMAN, M.B., F.R.C.P.,

Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital.

1. Quinine in pregnancy.

Dr. Guy N. Stephen (*Brit. Med. Jour.*, 1888, vol. i. p. 569), writing from Nicosia, Cyprus, says that some medical men fear that quinine is not a safe drug to give during pregnancy. In Cyprus, where malaria is rife, quinine is fearlessly given to pregnant women of all sorts, frequently in doses which, in England, would be thought enormous, without causing any evident uterine action. Given in labour, especially in uterine inertia from exhaustion, in 7 to 15 grain doses, it is a powerful stimulant to uterine contractions, which it assists by rousing the general nervous force. Malarial fever often causes abortion, which is then frequently arrested by quinine.

2. Trachelorrhaphy in pregnant women.

Dolérís (*Nouv. Arch. d'Obst. et de Gyn.*, 1887, p. 42) comes to the following conclusions. The importance of cervical lacerations in relation to pregnancy has been too much exaggerated. In exceptional cases, when the cervix uteri requires repair, the risk of abortion, so far from being a counter-indication, justifies the operation. Hæmorrhage from the operation need not be feared. The operation, performed under chloroform, and followed by rest, opiates, etc., does not excite uterine action.

3. The prevention of myxoma of chorion.

Dr. More Madder (*Royal Academy of Med. in Ireland*, 25th May, 1888) thinks $\frac{1}{2}$ grain of hyd. bichlor. given three times a day for some considerable time is more likely to prevent the death of the fetus, to which he thinks myxomatous disease of chorion is secondary, than anything else.

4. Acute leukaemia during pregnancy.

Dr. James L. Greene (*New York Med. Journ.*, 1888, vol. i. p. 144) relates two cases of leukaemia occurring during pregnancy.

The patients were sisters. One had had ague; suffered much from vomiting throughout pregnancy; took arsenic, iron, quinine without benefit; premature labour came on at six months, and patient died the following day. The fœtus did not suffer. The other patient had not had ague. She was given arsenic without benefit. As the symptoms were increasing, abortion was induced in the third month. After this the patient slowly improved, and ultimately got quite well. Another sister was said to have died from a similar illness. Dr. Greene draws two conclusions from these cases: (1) that pregnancy was an etiological factor; (2) that the artificial termination of the pregnancy was the curative agent.

5. *Viburnum prunifolium* for the arrest of abortion.

Dr. Carr Holstok Roberts (*Brit. Med. Jour.*, 1887, vol. ii. p. 1153) relates the case of a patient who had in three years four abortions. Nothing abnormal was found to account for them. During the next pregnancy she took 4 grains of the ext. vib. prunif. three times daily, and had a living child at seven months. Becoming again pregnant, she again took the same medicine throughout, and had a living child at full term. (The author says that patient and her husband had always enjoyed good health; but he does not mention whether special inquiry was made as to syphilis.) Schatz (*Cent. f. Gyn.*, 1888, s. 394) says that this drug diminishes the contractions of the pregnant uterus; but its action is too slow to be of use during labour.

6. The management of abortion.

Dührssen (*Arch. f. Gyn.*, Band xxxi. s. 161) considers the question of the best treatment of abortion. He believes that after abortion treated by expectancy or by plugging, retention of decidua is the rule; and that this retention often leads to prolonged hæmorrhage and to subsequent endometritis. He advises the rapid emptying of the uterus. The indication for this measure is the dilatation of the cervical canal. So soon as this is large enough to admit the finger, the ovum should be removed. This step may also be called for, on account of foul discharge or hæmorrhage, before the cervix is dilated. Dührssen thinks it is generally supposed that in abortions during the first three months the decidua vera becomes separated from below upwards. This he believes to be an error. When uterine contractions begin, first the placenta (or the part which will become placenta) is separated, and then the decidua vera, from above downwards. When the finger is introduced, it does not, as is generally supposed, pass between the decidua vera and the uterine wall, but into the space

which up to the end of the third month exists between the decidua vera and the reflexa. If the ovum is expressed, or digitally separated, the separation usually takes place at the upper pole of the ovum, and part of the decidua vera remains in utero. When the ovum has been expelled or removed, it is not possible to distinguish by the finger whether the decidua vera has been expelled or not; nor is it possible, if it has not been expelled, to remove it with the finger. The best way to remove it is with the curette. Dührssen has examined many deciduæ thus removed, and satisfied himself that the separation of the decidua produced by this instrument takes place in the same layer as is the seat of natural separation. In the two first months the curette may be used to remove the whole ovum. But after this time it is not suited for the removal of the ovum. This must then be digitally removed, and the decidua brought away with the curette. After this treatment, the author says, the next day the discharge is only tinged with red, on the third day light brown, and on the fourth or fifth day becomes yellow. Hæmorrhage, therefore, is less, the process is sooner over, and convalescence quicker. Dührssen has treated 120 cases in this way, with two deaths, one case of perimetritis, one of slight parametritis, one of offensive discharge and fever. One of the fatal cases was suffering from septiciæmia before she came under treatment, and died an hour after abortion. All the other patients did well.

7. Uræmia and intra-uterine death.

Recent researches have shown that in Bright's disease the fœtus often dies in utero. Charpentier and Butte (*Nouv. Arch. d'Obst. et de Gyn.*, 1887, p. 397) relate an experimental investigation of this question. They injected urea in large quantities into the veins of pregnant rabbits, and found that symptoms of uræmia could be thus produced, and that the fœtus died before the mother. This effect of Bright's disease in killing the fœtus, is, by itself, a reason for inducing labour in pregnancy with Bright's disease.

8. Albuminuria and disease of the placenta.

Wiedow (*Zeits. für Geb. und Gyn.*, Bd. xiv.) in a carefully written paper, has collected from different authors cases showing a connection between albuminuria, disease of the placenta, and intra-uterine death of the child, and to these he has added cases observed by himself. He concludes that the number of cases in which these events have occurred together is too great for anyone to consider their coincidence accidental. But at present he thinks the facts are too scanty to enable us to say whether the placental disease is the consequence or the cause of the albuminuria,

or even to describe any particular change in the placenta as belonging to this condition. It is also possible, he thinks, that the death of the child may be in some cases the primary condition, causing products to be present in the mother's blood which may irritate the kidneys. There is yet another explanation, viz. that both albuminuria and placental disease may be results of a third, as yet unknown, morbid condition.

Cohn (*Zeits. für Geb. und Gyn.*, Bd. xiv.) brings together a collection of cases of nephritis in pregnancy, in eighty-four per cent. of which he finds the child was either decomposing or did not survive. The cause of this he believes to be disease of the placenta. The practical conclusion follows, "that in women who, during pregnancy, even in the early months, suffer from indubitable nephritis, the best treatment is not to pay too much attention to the problematical survival of the child, but, in the interest of the mother, to speedily terminate the pregnancy."

9. Cardiac disease and marriage.

Jaccoud (*Arch. de Toc.*, 1887, p. 800) thus puts the question: Has the patient already suffered from her cardiac lesion? yes or no? If she has not, there is no reason for opposing her marriage. Her social condition must be borne in mind, whether she will be obliged to work throughout pregnancy, or whether she can rest if so advised. In the first case there will be more to fear, but even then it is better to incline in favour of marriage. If the patient has already suffered from failure of heart—as indicated by dyspnoea, hæmoptysis, above all, albuminuria—then it is most likely that at the fourth or fifth month of pregnancy these symptoms will return, and we should advise against marriage. There is, however, another factor which must not be left out of consideration—the "*aspirations morales*" of the young girl. By ordering a patient to give up a project of marriage, we may possibly do more harm than would happen if the marriage took place.

10. Extra-uterine pregnancy.

Much has been written during the year on this subject. It is not possible within the limits here permissible to refer to more than the chief directions in which observation has been active.

Mr. Lawson Tait (*Brit. Med. Journ.*, 1888, vol. i. p. 24; and elsewhere) is of opinion that all cases of extra-uterine gestation are at first tubal; that rupture takes place generally from the tenth to the thirteenth week, that rupture may be towards the peritoneum, in which case death from hæmorrhage results, or towards the broad ligament, in which case hæmorrhage is slight, and the patient may go to term. Dr. Berry Hart (*Edin.*

Med. Journ., Oct., 1887) has published two cases, of which he made sections by freezing, which demonstrate the reality of the latter condition. One fœtus was between four and five months' gestation, the other was supposed to have gone to term. In both, the fœtus and placenta were behind and beneath the peritoneum.

Several papers have appeared on the treatment of extra-uterine gestation by electricity; the chief of which are by Aveling (*Brit. Gyn. Journ.*, May, 1888), Van de Warker (*Amer. Gyn. Trans.*, vol. xii.), Brothers (*Amer. Journ. of Obst.*, May, 1888), all of which advocate this treatment; and a paper by Herman (*Lancet*, vol. i., 1888) in which it is criticised. The two first mentioned papers are followed by discussion, and the last by a correspondence between Aveling and Herman. Electricity is recommended because it is said to be able to kill the fœtus and so stop the pregnancy. The evidence in support of this view consists of cases in which there have been signs and symptoms more or less clearly pointing to extra-uterine gestation; and, after electricity had been used, either the signs and symptoms disappeared, or the patient aborted; and it is of course taken for granted that the diagnosis was accurate. Those who oppose the use of electricity do so because they think that in many of the cases the diagnosis was probably erroneous; and that, allowing its possible correctness in some, the cessation of the pregnancy and absorption of the products is what happens in many cases without electricity. A most important case has been published by Janvrin (*New York Med. Journ.*, vol. i., 1888, p. 458). He diagnosed tubal pregnancy at the fifth week; galvanism was used, but fatal hæmorrhage took place at the end of the seventh week. He thinks the galvanism killed the fœtus; but whether this be so or not, the fact that in a genuine case of extra-uterine gestation galvanism did not prevent fatal hæmorrhage, shows that it is not a remedy upon which reliance can be placed. One such case as this counterbalances a large number in which the diagnosis was doubtful, and the natural history of the disease not taken into account, before drawing a conclusion.

Those who recommend galvanism think that the diagnosis of extra-uterine gestation before rupture is easy and tolerably certain. Tait (*British Med. Journal*, vol. i., 1888, p. 1002) says that he has only once been called on to examine a patient before rupture, and in that case was unable to make the diagnosis. Cases cured by operation before rupture have been published—one by Hawley (*New York Med. Journal*, vol. i., 1888, p. 649), another by Jones (*ibid.*), and another by Price (*ibid.*). In none of these was the diagnosis made before operation. Janvrin (*op. cit.*) expresses his

belief that there is always some bleeding before the real rupture takes place; as a rule three or four attacks occur. Many cases have been published in which the conditions found on operating support this view. Most of the cases supposed to have been "cured" by electricity, in which the diagnosis was plausible, seem to have been cases in which these slight hæmorrhages had occurred, and had been enough to destroy the vitality of the fœtus. **Hawley** (*op. cit.*) mentions several cases in which symptoms of rupture or serious hæmorrhage occurred during electrical treatment, and ended in recovery. He says, "Why should electricity receive credit for what has frequently occurred when the case has been left to nature?"

The chief advantage of electricity seems to be that it keeps the patient under medical care, so that should rupture take place aid may be at hand.

Reported cases show that the opinion is gaining ground that the only proper treatment of early extra-uterine gestation is by abdominal section; and they also show that this operation in such cases is neither difficult nor (unless postponed till the patient is moribund) very dangerous. Cases operated on during the collapse immediately following a great hæmorrhage are few. **Herman** (*Brit. Med. Journal*, vol. i., 1888) has published one in which the operation was done $2\frac{1}{2}$ hours after rupture—the earliest on record—with success. **Gordon** (*New York Med. Journal*, 1888, vol. i. p. 118) operated 15 hours after rupture; he cautiously puts it:—"I think before all hæmorrhage had ceased." Many other cases have been published, most of them by **Tait** (*Brit. Gyn. Journal*), but in the majority of them the operation has not been done until reaction had followed the collapse primarily resulting from the hæmorrhage. The mortality has not been large, either in Tait's hands or in those of others, but cases are not yet numerous enough to warrant any generalisations as to the amount of risk. In most of them removal of the gestation has been followed by washing out of the peritoneum and drainage, and in some in which drainage was not used the wound had to be reopened. **Sandner**, however (*Cent. für Gyn.*, 1887, s. 520), reports a case operated on successfully at seven weeks' pregnancy in which drainage was not used. **Tait** mentions a case in which the placenta was implanted on intestine at the back of the uterus. It was removed, and its site smeared over with solid perchloride of iron: recovery took place. Cases are reported by **Brühl** (*Arch. für Gyn.*, Bd. xxxi. s. 404), and by **Rutherford Morison** (*Lancet*, vol. i., 1888, p. 681), in which hæmorrhage was restrained by plugging with gauze.

The treatment of extra-uterine gestation at or after full term was discussed at a special meeting of the Obstetrical Society of London (*Trans.*, vol. xxix.). Herman contributed a paper on delivery by the vagina. He defined the cases suitable for it as follows:—"At or after full term, when the fœtus is presenting with the head, breech, or feet, so that it can be extracted without altering its position, and when it is quite certain, from the thinness of the structures separating the presenting part from the vaginal canal, that the placenta is not implanted on this part of the sac, and it is not certain that the placenta is not implanted on the anterior abdominal wall." The child should not be turned, no attempt should be made to remove the placenta, and the after-treatment should consist in frequent washing out. (In the case referred to above, of which Hart made a frozen section, it is clear that had the patient applied for treatment the fœtus might have been delivered by the vagina without the peritoneum being opened.) Champneys describes a unique case in which, on account of orthopnœa, the child was removed at the seventh month, and drainage was attempted; but the placenta did not come away, and the wound healed. The patient died 11½ weeks after operation and the placenta was found detached. Williams gives a case of delivery by abdominal section in the thirty-fifth week, with success both as to mother and child: the third case on record. Herman's paper contains a table of all the published cases of delivery by the vagina, and Champneys' paper one of all the published cases of laparotomy. Doran describes an unsuccessful case treated by laparotomy four months after the death of the child, and Godson a successful one of delivery by the vagina at five months' pregnancy. The papers and the discussion brought forward facts of much interest concerning the behaviour of the placenta, and several speakers pointed out how much a more accurate knowledge of the characters and behaviour of the extra-uterine placenta would assist us in deciding upon the right course of action in these cases.

II. Perforation, premature labour, and Cæsarean section in contracted pelvis.

Wyder (*Arch. f. Gyn.*, Band xxxii.) compares these methods of treatment. He quotes Crédé, who estimates the present mortality of Cæsarean section at 28 per cent., and in contracted pelvis as 17·5 per cent. Wyder thinks there is danger at present of the risk of Cæsarean section being underrated, and of its being performed too indiscriminately, and by inexperienced operators; and should this be largely the case, there will be risk that its mortality will soon be not far short of the old figure of 80 per cent. He

does not think the time has yet come for the replacement of craniotomy in living children by Cæsarean section, although it may perhaps come in the future. Wyder, to support his opinion, compares the mortality of Cæsarean section with that of craniotomy and premature delivery. He takes the statistics of the lying-in institution of Berlin, and finds the mortality after craniotomy amounted to 8.3 per cent. In contracted pelvis the mortality was 8.4 per cent., but in the higher degrees of contracted pelvis ($2\frac{1}{8}$ to $2\frac{3}{4}$ inches conjugate) it was *nil*. The maternal mortality after premature labour for contracted pelvis was 5.3 per cent.; but here also, in the higher degrees of contraction, there was no maternal mortality. These very successful results in the worst cases are to be attributed to the early recognition of the deformity and adoption of the appropriate treatment. In the cases of contracted pelvis, in which the contraction is not so great as to preclude the birth of a living child, the prognosis does not depend only on the degree of contraction, but on the size, hardness, adaptability and mode of entry of the fœtal head, on the strength of the pains, the time at which the membranes rupture, the condition of the soft parts, etc. None of these things have to be considered in a case which at the beginning is recognised as one calling for craniotomy. In the highest degrees of contraction Wyder thinks the early induction of abortion is preferable to Cæsarean section. Taking the best results of Cæsarean section and the worst of craniotomy, he finds the mortality of the former double that of the latter; and good results from Cæsarean section can only be expected in well-managed hospitals, and when performed by skilful hands. The only cases in which, with a pelvis large enough to admit of delivery by craniotomy, Cæsarean section is justifiable are those in which, after repeated pregnancies ending in death of the child, the mother deliberately chooses to run the risk of the abdominal operation for the sake of having a living child.

12. Premature labour.

Strauch (*Arch. für Gyn.*, Band xxxi. s. 385) analyses twenty-eight cases of the induction of labour. Galvanism was used once, and failed; pilocarpin three times, with failure each time. The vaginal douche twenty times, being given every two hours for from one to six days, but usually for about three days. The bougie was used twenty-six times, twenty times after the vaginal douche had been previously used, six times without. In three cases the bougie failed, and rupture of the membranes had to be resorted to. The author attributes the failure to exhaustion of uterine irritability by the douche (which had been used in each of these cases). He therefore is not in favour of the douche. In

the remaining cases labour was brought on by rupture of the membranes.

13. Cocaine in midwifery.

Dr. John Phillips (*Lancet*, vol. ii., 1887, p. 1062), writing on the use of cocaine in midwifery, draws the following practical conclusions:—(1) "That cocaine, in whatever way administered for uncontrollable pregnancy vomiting, is a valuable adjunct, and in some cases" (which, remains to be shown) "a superior drug to those at present in vogue. (2) That during the painful earlier stages of labour, especially in primiparæ, it materially assuages the pains, but neither quickens them nor retards their onset, and hence has no effect on the actual dilatation." (Dr. Phillips uses Moore's Cones.) (3) "That it is useless in mitigating the pains of expulsion and those caused by pressure on the perineum. (4) That in the case of sore nipples it relieves the pain attendant on suckling, though the duration of its effects is not sufficiently long to be of material service. It is, however, without any apparently detrimental effect upon the suckling."

14. Rigidity of the cervix uteri.

Dolérís (*Nouv. Arch. d'Obst. et de Gyn.*, 1887, p. 495) quotes from a former memoir of his on this subject, in which he described three kinds of rigidity of cervix during labour:—(1) spasmodic; (2) pathological, as from cancer fibroids, etc.; (3) anatomical, i.e. rigidity from advanced age, œdema, induration, etc. He now writes to express his belief that there is no such thing as the "anatomical" rigidity that he formerly admitted. In the cases which appear to be of this kind the true cause is to be sought in feebleness or absence of uterine contractions, and the best treatment is quinine, together with hot bath or douche. In "spasmodic" rigidity also, the cause should be looked for in the state of the uterus as a whole, not simply in that of the os. (By "spasmodic" rigidity Dolérís seems to me to have in mind the condition of "premature uterine retraction" described by Litzmann.)

15. The knee-elbow position in version.

Dr. E. R. Maxson (*New York Med. Journ.*, vol i., 1888, p. 573) urges the advantages of the knee-elbow position for the performance of version. The weight of the child drags the presenting part from the os uteri and pelvic cavity. The woman cannot in this position "bear down." The liquor amnii is in this position more likely to be retained until the version has been done. The abdominal muscles are relaxed, and so manipulation made easier. It is probable that in this position the uterus contracts less violently and relaxes more readily. Dr. Maxson more especially

dwells on the greater ease of performing cephalic version with the mother in this position, but it will be evident that the advantages he enumerates equally facilitate podalic version.

Dr. Cutts (*Amer. Journ. of Obst.*, 1887, p. 1173) endorses Dr. Maxson's recommendations.

16. Noosing the arm before version.

This most useful manœuvre, which saves much trouble in bringing down the arm after the trunk has been extracted, was described to the German Gynæcological Society by Schatz (*Cent. für Gyn.*, 1888, s. 395), so that it does not appear to be yet widely known; but it is a very old plan, and English accoucheurs ought to be acquainted with it, since it is mentioned in Dr. Galabin's work on midwifery, where references to other authors who have employed it may be found.

17. The correction of unfavourable face presentations.

Volland (*Cent. für Gyn.*, 1887, s. 736) advises that in mento-posterior face presentations, when the face has been pressed deep into the pelvis, the whole hand should be introduced (the left hand if the chin is to the right, the right hand if chin to the left), the face grasped, and the chin turned forwards and held in this position during the pains. He describes a case in which he successfully terminated a difficult face case by this manœuvre. Dr. Edward Reynolds (*Boston Med. and Surg. Journ.*, 1887, vol. ii. p. 102) relates a case of brow-presentation, which was easily extended into a face and chin posterior. Attempts at forceps delivery failed. Then conversion into a vertex was attempted, but found impossible. Turning was also judged impracticable. The chin was easily rotated to the front by the hand, and then delivery accomplished with forceps. (In the "Year-Book" for 1888 attention was called to this method. I believe it to be the best method of treating such cases.)

18. The shape of the midwifery forceps.

Dr. Wm. Stephenson (*Brit. Med. Journ.*, 1888, vol. i. p. 684) recommends Simpson's forceps, the length increased by an inch and the width of the fenestræ by a quarter of an inch. This latter slight modification, he finds, gives a much-improved grasp.

19. The delivery of the after-coming head.

Dr. Philip M. Schmiedt communicated to the Obstetrical Society of Philadelphia a paper on this subject (*Amer. Journ. of Obst.*, March, 1888). He strongly advocates delivery by the forceps. In the discussion on the subject (*ibid.*, p. 319) his views met with much approval. (Neither in the paper nor in the discussion is the difference brought out between the appropriate treatment of

the head detained above the brim, and that of the head detained in the cavity of the pelvis. In the former case the forceps is useful; in the latter, the so-called Prague method is best, the mechanism of which is admirably explained in Dr. Galabin's work on midwifery.)

20. Placenta prævia.

A discussion on this subject, opened by Dr. Robert Barnes, took place at the meeting of the British Medical Association in 1887. Dr. Barnes's paper was a re-statement of views familiar to readers of his former writings. The main points in treatment on which Barnes insists are these. He regards the *accouchement forcé* as very dangerous. He rejects also plugging. He approves of early rupture of the membranes. That which is most peculiar to himself is the importance he attaches to separation of as much of the placenta as can be detached with the finger, and the confidence he places in this step. This, he says, favours the arrest of hæmorrhage, and "converts a labour, complicated with placenta prævia, into a natural labour." If, after separation of placenta, labour does not advance, dilate the cervix with water bags. When dilatation has been obtained, deliver by forceps or turning, according to the position of the child. If by turning, deliver the after-coming head with forceps.

Cases showing that separation of the placenta is not to be trusted are reported by Mr. W. M. Knipe (*Brit. Med. Journ.*, vol. i., 1888, p. 993) and by a writer signing himself W. F. (*ibid.*, p. 943).

Obermann (*Arch. f. Gyn.*, Band xxxii. s. 122) gives the results of treatment of placenta prævia in Leipzig, during the years 1883-7. During this five years sixty-four cases of placenta prævia were met with. Eleven per cent. of the mothers died; fifty-three per cent. of children. The treatment regarded in this clinic as the right one is early bipolar version, followed by slow extraction. This was practised in forty-nine cases, with two deaths. One of these was almost moribund when first seen, and, subtracting this, we have forty-eight cases, twenty-four of which were central, with one death. The foetal mortality of these cases was 62.5 per cent. The essential details of treatment are these:—If hæmorrhage be serious, as soon as ever a finger can be got through the os, treatment with a view to turning is begun. The cervix is dilated, if necessary, by water bags. The placenta is separated so far as is required to reach the membranes, or if it be so central that the membranes cannot be reached, it is perforated; then turning performed, and a foot brought down. Extraction is not hurried: the duration of this stage of the treatment varied between six minutes and six hours. It was not entirely left to

nature, but so carried out that the breech should steadily and continuously press against the os. Absolute stoppage of hæmorrhage is only to be secured by this fixation of the breech. This steady, gentle traction is accompanied by friction over the body of the uterus. When the breech is born, the state of the cord is ascertained, and if it pulsate, the delivery of arms and head is accelerated according to the usual methods. Strict antiseptic precautions were taken.

Nordmann (*Arch. für Gyn.*, Band xxxii. s. 133) summarises forty-five cases occurring in the Dresden lying-in hospital, during 1883-7. Nineteen of the cases were central. Of the forty-five, twelve were treated by plugging or rupture of membranes, or both. All (except one, an abortion) were head presentations. All these mothers recovered. Turning, followed by rapid extraction, was performed in twenty-three cases, of which four died. In six, turning was performed, and then the case was left to nature, and of these one died. The foetal mortality in the first group of cases was 58 per cent., of the second, 30 per cent.; while the six children of the third group were all stillborn. **Barnes's** views as to the danger of the *accouchement forcé* are borne out by **Nordmann's** cases.

21. How to plug the vagina.

Freund (*Cent. f. Gyn.*, 1887, s. 681) regards the usual mode of plugging the vagina, viz. stuffing it full of masses of wool or other material, as inefficient. The object of plugging, he says, is first to cover up and so close the os uteri, and then to get as much pressure as possible on the covering material, so as to make the closure firm. If the vagina is stuffed tightly enough, in the usual way, these ends are attained; but at the cost of much discomfort to the patient. But he has often found the plugs lying between the anterior vaginal wall and the perineum, leaving plenty of room in the posterior cul de sac for blood to accumulate. His recommendations are as follows:—Iodoform gauze, dry, is the best plugging material. It should be inserted, not in round balls, but (by means of a Sim's speculum) in flat plates, which should lie like a plaster over the os uteri. They should be large enough to project round the cervix on all sides, to fill the posterior cul de sac, but to leave free the lower third of the vagina. These must be kept in place, and applied to the os by an indiarubber watchspring pessary; and the whole carefully held in place with forceps or spatula while the speculum is being withdrawn.

22. *Veratrum viride* in puerperal eclampsia.

Dr. Charles Jewett (*American Gyn. Transactions*, 1887) communicated a paper on the treatment of puerperal eclampsia by

this drug. He says, "experience has shown that no convulsion will occur if the system is sufficiently under the influence of the drug to hold the pulse under sixty per minute." The guide to the use of the drug is the frequency of the pulse. The average dose is 10 to 20 minims of Squibb's fluid extract; the smaller dose, repeated in half an hour, being usually sufficient. The patient must be kept recumbent while taking it. He reports twenty-two cases thus treated, of which six died. In the fatal cases, it is said that the patients had had many fits before treatment was begun.

23. Treatment of puerperal eclampsia.

Veit (*Cent. f. Gyn.*, 1888, s. 276) lays stress on the importance of producing deep and prolonged narcosis as the main treatment. He combines subcutaneous injections of morphia with chloroform inhalations. He begins with half a grain of morphia, but has given as much as three grains in twenty-nine hours. Lately he has combined with this diaphoresis, produced by hot baths and blanket packs. Wet sheet packs he does not find so efficacious. The combination of narcosis and diaphoresis he thinks should save even the worst cases.

24. Cæsarean section.

Successful cases of Cæsarean section, performed on the principles laid down by Säger (*see* "Year-Book," 1886), continue to be recorded, and justify the hope that this operation may in time replace craniotomy. Zweifel (*Arch. für Gyn.*, Band xxxi. s. 193) publishes seven cases, six of which were successful. The modification introduced by Müller, viz. turning the uterus out of the abdomen before opening it, Zweifel thinks an improvement. He thinks the resection of part of the muscular wall of the uterus, as at first practised by Säger, is unnecessary and hurtful, because it prolongs the operation. The peritoneum can often be folded in, and thus peritoneal surface sutured to peritoneal surface without resection; and if it cannot be folded in, Zweifel thinks it better simply to bring accurately together the cut edges of the peritoneum and the underlying muscular tissue. Lébédéff (*Arch. für Gyn.*, Band xxxi. s. 218) publishes two successful cases. He has collected fifty-eight cases, which he believes are all those performed up to the time of his writing, and among which there were fifteen deaths, or 26 per cent.; of the children, fifty-four, or 93 per cent., were saved. Another successful case is published by Gehl (*Arch. für Gyn.*, Band xxxi. s. 370); Krassowski (*Arch. für Gyn.*, Band xxxii. s. 282) publishes five cases of Porro's operation, with one death, and two of Cæsarean section after the method of Säger, both successful;

Wiedow (*Cent. für Gyn.*, 1887, s. 617) publishes three successful cases, after Säger's method, by Hegar.

25. Fibroids complicating pregnancy.

Dr. John Phillips (*Brit. Med. Journ.*, vol. i., 1888, p. 1331) has collected all the cases in which, on account of pregnancy with fibroids, the uterus has been removed. He insists on the resentment which fibroids show to interference, the dangers attending induction of labour or attempts to alter the position of a fibroid; and urges that, in suitable cases, the removal of the uterus should be done as an operation of selection, and not after other methods of delivery have been tried and failed, thereby greatly aggravating the danger.

26. Mitral stenosis and the third stage of labour.

Dr. D. Berry Hart (*Edin. Med. Journ.*, Feb., 1888, p. 705) considers that mitral stenosis forms a very serious complication of labour. The danger occurs in the third stage of labour; for when delivery has taken place, the blood before accommodated in the uterine and placental sinuses is returned to the right side of the heart, which becomes distended and the lungs engorged, and failure of heart, leading to sudden death, or to dyspnoea, pulmonary oedema, etc., is the result. Dr. Hart therefore holds that, in cases of mitral stenosis, we should try and dissuade from marriage; that during pregnancy the patient should be kept at rest, and strophanthus administered; that during labour chloroform should be given; that in the third stage of labour even free hæmorrhage should be welcomed, ergot should not be given, and if hæmorrhage be scanty we should look out for embarrassment of the circulation. If this occur, strophanthus should be pushed, dry cupping over the heart practised; and if this fail, bleeding from the arm.

There are two important points Dr. Hart does not discuss: (1) How many patients with mitral disease go through pregnancy and labour without trouble? (2) Why not induce premature labour, instead of giving strophanthus, etc.?

27. Retention of placenta from deficient intra-abdominal pressure.

Lange (*Zeitsch. für Geb. und Gyn.*, Band xv. s. 30) describes cases of retention of placenta which he believes to have been due to abnormal deficiency of pressure within the abdomen. They were characterised as follows:—Great sinking in of the abdominal parietes, so that the anterior abdominal wall lay close to the posterior, and the outline of the uterus was plainly visible, the abdominal walls being drawn in above and around it. There was *no hæmorrhage*. The cervix admitted the hand easily, which

came in contact with the foetal surface of the placenta. When the edge of the placenta was detached a sucking sound was heard, as if air from the vagina was entering the uterus, and the placenta fell into the hand. The placenta had been retained in one case for four hours, and attempts at expression had failed.

28. Tonic uterine contraction without completeness of retraction.

Dr. Matthews Duncan (*Obst. Trans.*, 1887, p. 369) calls attention to a rigid spastic condition of the uterus, especially just after delivery, without complete retraction, and while the uterus has nothing within it to prevent its complete retraction or closing. In this state the hard uterus has a globose cavity. He more particularly calls attention to the occurrence of hæmorrhage from the placental site while the uterus is in this state of firm spastic contraction with incomplete retraction. He regards this hitherto unrecognised condition as explaining the difference of opinion among obstetric authorities, some asserting the occasional recurrence of post-mortem hæmorrhage from a hard contracted uterus, others denying it. He relates cases; and in the discussion on the paper similar cases were mentioned by others.

29. Ergot and acetic acid in post-partum hæmorrhage.

Mr. T. A. Francis (*Brit. Med. Journ.*, 1888, vol. i. p. 295) believes that the action of ergot is aided by combining it with acetic acid. He gives ʒj. of ext. erg. liq., and ʒj. of acid. acet. conc. in water, and finds this provoke uterine contraction and cause sleep with little or no after pains. Mr. G. S. Mahomed (*ibid.*, p. 743) corroborates this; as does D. C. R. Illingworth (*ibid.*, p. 1148).

30. Antipyrin in painful uterine contractions.

Dr. Chouppe (*Journ. des Accouch.*) finds that in cases in which ergot causes painful uterine contractions, antipyrin, administered in gr. xxx. doses, will arrest the pain, although it does not diminish the effect of ergot in the uterus. It should be administered at the same time as the ergot.

31. The accidents of intra-uterine injections.

Dr. A. Mangin (*Nouvelles Archiv d'Obst. et de Gyn.*, 1887 and 1888) contributes an elaborate monograph on this subject. He classifies these unfortunate occurrences under three heads: 1. Accidents of retention; 2. Septic accidents; 3. Nervous accidents. The accidents of retention are: 1. Slow absorption of the injected fluid, either from its retention in uterus or vagina, or from too frequent repetitions of the injections. 2. Escape of the fluid through the fallopian tubes into the peritoneum. 3. Direct

penetration of the fluid injected into the circulation, through the venous sinuses of the uterus. This is the most frequent and most grave accident. The most common of the *septic accidents* is rigor followed by fever. Less common are metritis, perimetritis, peritonitis, phlebitis, embolism: effects which the author attributes to the injections provoking sudden, and perhaps irregular, uterine contractions, by which clot, or pus, is dislodged from where it was and driven into the circulation or into the peritoneum. The *nervous accidents* have been considered frequent, but Dr. Mangin thinks them rare. Shock, and tetanic contraction of uterus, have occurred from irritating or too cold injections. Distension of the uterus after delivery does not produce intense nervous reaction.

The precautions necessary to prevent accidents are, first, to use a tube with a double channel. Dr. Doléris has invented a good form, in which there are two tubes, which, when in the uterus, can be separated by a screw, so as to leave a space between them through which fluid can flow out; the instrument is thus a cervical dilator as well as an irrigator. The fluid should be allowed to flow by gravity from a reservoir, which should not be more than about ten or twelve inches above the level of the outflow, so that the current shall not be more forcible than is sufficient; and it should be lowered, so as to stop the current when there is any appearance of uterine contraction. The fluid should be allowed to run before introducing the tube, so that the latter may not contain air. Care should be taken that fluid be not left in the vagina or uterus. If the patient have renal disease, or be known to be very sensitive to mercurials, sublimate should not be used; or if used, it should be followed by an injection of warm water, to make sure that no retention of the mercury takes place. Intra-uterine injections should not be used cold; between 80° and 90° is a good temperature. If these precautions were always used, the author thinks accidents would be rare. (The author does not refer to the cases, several of which have occurred, in which death has taken place during intra-uterine injections post-partum: it has been believed in consequence of sudden distension of the uterus. Such cases make us hesitate before the author's statement as to the harmlessness of distension of the uterus post-partum.)

32. The conditions which favour mercurialism in lying-in women.

Boxall (*Obst. Trans.*, vol. xxx.) shows that it is possible for fluid injected into the vagina to find its way into the uterus. *This will be favoured by relaxation of the uterus. Hence good*

contraction of the uterus is one safeguard against absorption of sublimate injections; and after giving such injections, pressure on the uterus should be made to see that the uterus is contracted. To prevent "ballooning" of the vagina, the douche should always be given in the supine position. To promote elimination the bowels should be made to act daily, such agents being used as produce copious and loose stools. He also thinks that sublimate should not be used where disease of the kidneys was present. But evidence of the tendency of kidney disease to favour mercurialism was not adduced; and one speaker in the discussion said he had used it in kidney disease without symptoms following.

33. Corrosive sublimate and London water.

Dr. Boxall (*Brit. Med. Journ.*, 1888, vol. i. p. 295), writing with reference to the fact that the hard London water decomposes the officinal sol. hyd. perch. (which is made with ammonium chlorid.), points out that this may be prevented by adding dilute hydrochloric acid, in the proportion of half as much acid as corrosive sublimate. This neutralises the alkalinity of the water, and maintains the strength of the solution.

34. The bacteriology of puerperal fever.

Researches which help to afford a rational basis for treatment, even though they do not directly bear on it, call for notice in a "Year-Book of Treatment." Döderlein (*Arch. für Gyn.*, Bd. xxxi. s. 412), and Von Ott (*Arch. für Gyn.*, Bd. xxxii. s. 436) have independently examined the lochia of healthy lying-in women to ascertain the presence of microbes. They agree in their results, viz. that the lochia contained in the uterus are free from germs, while the discharge in the vagina contains abundance of germs of many different kinds. Winter (*Zeitsch. für Geb. und Gyn.*, Bd. xiv. s. 443) examined the secretions of the genital canal in the unimpregnated state, and with a result corresponding to those of Doderlein and Von Ott, viz. the secretions in the uterus and tubes were free from microbes, those of the vagina contained germs in great numbers and variety. These results are in harmony with clinical experience. They explain why it is that tumours, retained secundines, fœtus, etc., *in utero* do not putrefy, while, when such products have descended into the vagina, they quickly putrefy; and they also putrefy when, by means of finger or instrument, vaginal secretions have been carried up to the uterus. The utility and sufficiency of vaginal antiseptic injections after labour or operations on the uterus also follow from these results. Von Ott points out how the parturient process—the unfolding of the vagina by the pressure of the head, and its being washed out by the descending liquor amnii and the blood poured out in the

third stage of labour—tend to purify the canal from germs. Döderlein and Von Ott also examined lochia from patients with febrile symptoms, and in them they found germs in the uterus, but their observations on such patients are too few to justify any general conclusions. The question has also been investigated by Czerniewski (*Arch. für Gyn.*, Bd. xxxiii.), who found microbes only exceptionally in the uterine cavity of healthy lying-in women, while in those with febrile symptoms the lochia from the uterine cavity contained streptococci, and in women dying from septicæmia, not only the lochia in the uterus but every organ of the body contained them. Lochia from the uteri of healthy women injected into the bodies of animals produced no effect whatever, but those containing streptococci produced inflammation and suppuration.

35. Puerperal fever.

In the Obstetrical Section of the meeting of the British Medical Association in 1887, the subject of puerperal fever was discussed. Although some differences of opinion as to its pathology were evident, there was little disagreement as to the essential points in its prophylaxis. Dr. Playfair, who opened the discussion, took it to be almost universally admitted that "puerperal fever is practically the same thing as surgical septicæmia." But he held that the poison might originate in the patient *de novo*, or might be conveyed to the patient by sponges, the hands of practitioners and nurses, or through the atmosphere. The essentials for prevention were to get strong contraction of the uterus; to close every laceration by suture; to dip hands and instruments, before touching the patient, in 1 in 1000 solution of corrosive sublimate; to use, as a lubricant, carbolic oil 1 in 8; to syringe the vagina twice daily, after delivery, with dilute Cond's fluid. The medical attendant should use a nailbrush, and should frequently syringe the vagina and sponge the vulva with an antiseptic lotion before delivery. Sanitary towels should be used in place of diapers. Playfair objects to syringing with sublimate solution after labour, because poisoning has sometimes occurred from this cause.

According to Robert Barnes (*Brit. Med. Journ.*, 1887, vol. ii. p. 1036), the "simplest fundamental form of puerperal fever is a compound of three forms of altered blood: (1) the blood of the *gravidæ*; (2) the blood of the parturient; (3) the blood of the puerpera. This is purely autogenetic." The conditions arise entirely within the patient. Other conditions causing it are chills, malarious conditions, errors of diet, bad hygienic surroundings, emotions. Fever may arise from decomposition of lochia, *placenta*, a dead fœtus, dead tissues, or thrombi. Also the stasis

and congestions induced by pregnancy; the strumous diathesis and other dyscrasie; hæmorrhage. Under all these conditions, fever may arise without the introduction of any external poison. This Barnes calls autogenetic fever, or autosepsis. There are also external fever-exciting causes: poison inoculated by the medical man or nurse, by linen, or external media, among which are the cadaveric poison and the poisons of the zymotic diseases. These poisons, "received and developed in the special nursery-ground of the puerperal blood," become modified. He has constructed diagrams showing the monthly prevalence of puerperal fever, scarlatina, and erysipelas, for forty years, and finds that they agree in being more prevalent in winter. The prevalence of puerperal fever in winter he attributes to the frequent deficient access of fresh air to the lying-in room. The lying-in room should face south, so that the window may be opened during sunshine. Damp must be combated by an open fireplace. Contrivances for introducing filtered, warmed, and dried or washed air, are good. Hot-water pipes are "too effective means for the culture and diffusion of noxious germs." The "so-called antiseptic plan is but a part of the general scheme; there is danger in dwelling too exclusively upon it."

It will be seen that Barnes's opinions are much like those current before the days of Semmelweiss; only that, while physicians at that time attributed all puerperal fever to causes such as Barnes invokes, Barnes admits that septic poison has something to do with it.

36. "Auto-genetic" puerperal fever!

Fehling (*Arch. für Gyn.*, Band xxxii.) discusses the origin of those cases of puerperal fever in which direct infection cannot be traced. He discusses the theory of "self-infection," the so-called "autogenetic" form of puerperal fever. The conclusion he comes to is this: there is no such thing as "spontaneous infection"; all infection comes from without, although it may be conveyed to the patient before, during, or after delivery. We may distinguish cases of primary infection by microbes from without from cases in which the blood is poisoned by the resorption of ptomanies, the result of the decomposition of tissues or secretions set up by microbes; but, in both alike, the microbes come from without.

37. Erysipelas and puerperal fever.

It is a widely-held opinion that there is a close connection between erysipelas and puerperal fever; that the contagion of erysipelas, brought to a lying-in woman, may cause puerperal fever. There can be no doubt that the same causal conditions, viz. those produced by deficient cleanliness, are favourable to the

occurrence of both diseases, and therefore they often occur together. But Fehleisen appears to have shown (*see* New Sydenham Society's collection of essays on Microparasites in Disease) that erysipelas is a specific disease, dependent on a micrococcus of its own, and that this micrococcus produces erysipelas only, and nothing else. Gusserow and others have published cases in which pregnant and puerperal women have had erysipelas, which has run its course as erysipelas, and nothing else. (I have seen such cases.) Since then, other observations have been published which seemed to support the older view of the close relation between erysipelas and puerperal fever; cases in which what was supposed to be the erysipelas coccus was found in patients dying from puerperal fever, and in which the inoculation of cocci obtained from erysipelatos patients produced general blood-poisoning in animals. These observations are well criticised by Kroner (*Arch. für Gyn.*, Band xxxii. s. 414), who shows that sufficient care was not taken to distinguish between the true erysipelas coccus and the streptococcus pyogenes. His criticisms go to strengthen the conclusion to which modern researches point, viz. that puerperal fever is not a modified erysipelas: that it is no explanation of the occurrence of puerperal fever to point to some way in which the contagium of erysipelas might have reached the patient. The cause must be sought in neglect of antiseptic precautions. These are equally indicated, whatever view of the relation of erysipelas to puerperal fever be adopted.

38. Scarlatina and the puerperal state.

One of the most important contributions to obstetrical science during the year has been a series of papers communicated to the Obstetrical Society of London by Dr. Robert Boxall (*Obst. Trans.*, 1888). The facts are derived from an epidemic which occurred in the General Lying-in Hospital, in the course of which sixteen women were attacked. These cases were observed with great care, and their subsequent histories thoroughly followed up, and the condition of other patients in the hospital at the time, and therefore exposed to infection, was also recorded. Boxall's papers also contain a full account of the literature of the subject. The following are the author's conclusions. He finds that lying-in women are especially often attacked with the disease in the first week of lying-in. This has been observed by others, who have supposed, in order to account for it, that the incubation period of scarlatina was either abnormally lengthened or abnormally shortened, when infection took place during pregnancy. Boxall finds that the disease may occur before labour, and then premature labour may come on. Its more usual development in the first

week of lying-in, and its rare appearance later, he accounts for by supposing an especial liability to infection during the first week of the lying-in. He sees no reason for supposing that the incubation period is lengthened by pregnancy, but believes that when infection takes place during or shortly after labour the incubation period may be shortened. He believes that there is a similar reciprocal influence between scarlet fever and menstruation; that the liability to infection is especially marked shortly before, during, and immediately after, a menstrual period; that infection occurring shortly before a menstrual period may precipitate the flow; and that when infection takes place during or shortly after a menstrual period, the incubation period may be shortened. (Cases observed at the London Fever Hospital are adduced in support of these conclusions.) When scarlatina occurs during pregnancy the throat symptoms are unmodified; but when it occurs after delivery, sore throat is usually absent at first, and slight later on; but the cervical glands are usually affected, whether there be sore throat or not. The tongue affection is also slight, and the rash is preceded by marked flushing of the face. When labour occurs during scarlatina the pains are apt to be feeble throughout, inertia sets in early, and post-partum hæmorrhage is liable to occur. In the lying-in period the only effects noticed were slight tenderness over the uterus at the outset of the attack, and diminution or arrest of the mammary secretion. Dr. Boxall thinks scarlet fever may possibly cause the lochia to become foul, but he did not observe it. Infants kept at the breast are prone to scarlatina; but when the mother is infected before delivery the infant more frequently escapes. In only one of Dr. Boxall's cases was there pelvic inflammation present. Dr. Boxall gives a table and diagram showing the course of the lying-in in forty cases who were exposed to infection, although they did not contract the disease; and also in 300 patients who were confined in the hospital during the prevalence of the epidemic. These tables show that exposure to infection resulted in no detriment to the puerperium; and the prevalence of scarlatina in the hospital had no effect whatever on the morbidity of the other patients in it. In a concluding paper Dr. Boxall describes precautions which may be taken to prevent communication of the disease. These papers show clearly that scarlatina given to a lying-in woman produces scarlatina *and nothing else*; that it is no explanation of a case of septicæmia to point to a source from which the patient might have contracted scarlatina. Dr. Cayley, in the discussion which followed, expressed his belief that "scarlatina was no more capable of directly producing septicæmia than septicæmia was of

producing scarlatina." Dr. Matthews Duncan pointed out that during the most severe epidemics of scarlatina the puerperal mortality was not in the slightest degree raised. Dr. Boxall expressed the opinion that scarlatina might produce fœtid lochia, and this foul discharge might lead to septicæmia, scarlatina thus indirectly producing septicæmia. This conjecture, however, was not supported by the facts which he adduced.

Dr. Leopold Meyer (*Zeitsch. f. Geb. und Gyn.*, Band xiv.) relates an epidemic of scarlet fever among lying-in women at Copenhagen. The question to be investigated he propounds as follows:—"Is the view correct that scarlet fever, communicated to a woman in labour or lying-in, may, and often does, present itself as a disease that has only a remote, or scarcely any, resemblance to ordinary scarlatina, but a so much the greater resemblance to puerperal fever?" Meyer's cases, twenty-one in number, give him not the slightest ground for affirmatively answering this question. Like Boxall, he finds patients especially prone to be attacked in the first week after delivery; that the throat symptoms are usually slight, and that the prognosis is not so unfavourable as has been thought. Three out of the twenty-one patients died.

39. The curette in puerperal endometritis.

Dr. C. W. Earle (*American Journal of Obst.*, 1887, pp. 762 and 885) says that whenever there is a high temperature on the eighth, ninth, or tenth day after the delivery, he is in the habit of washing out the uterus; and then, if the high temperature continue, he cures; and in almost every case the amount brought away astonishes everybody. Sometimes two or three drachms are brought away; the temperature becomes normal in twelve hours, and a speedy convalescence takes place.

Dr. H. C. Coe, in a paper on "late elevation of temperature during the puerperium," gives similar advice (*American Journal of Obst.*, February, 1888). He insists, however, on the harm that may be done, either by the douche or the curette. The intra-uterine douche should never be used unless there is evidence of putrid matter within the uterus, and the curette never unless the douche has failed.

40. Puerperal peritonitis and its operative treatment.

Mr. Lawson Tait, writing on the purgative treatment of peritonitis (*Lancet*, vol. ii., 1887, p. 836) says:—"Puerperal peritonitis has as its base in very many cases a specific poison, against which purgatives and everything else are powerless. Even opening the abdomen and cleaning it out fails to obtain the large success

in puerperal cases which it certainly has in suppurative peritonitis which is non-puerperal."

Dr. Baldy (*American Journal of Obst.*, 1887, p. 867) reports a case which he believes to be the first of its kind. Symptoms of peritonitis began on the second or third day after delivery, and gradually got worse. The abdomen was opened; the left fallopian tube was found distended with pus, and there was an abscess in the cellular tissue on that side. The tube was removed, and the abscess drained. The patient recovered. In the discussion on this case, Dr. Longaker mentioned one in which the abdomen was opened on the ninth day after delivery, general peritonitis being present, and the patient died.

Dr. Boldt (*ibid.*, 1888, April) records a case of laparotomy for peritonitis, performed four days after delivery, with a fatal result.

41. Ophthalmia neonatorum.

Korn (*Arch. f. Gyn.*, Band xxxi. s. 240) publishes a paper on the prevention of this disease, and shows that by simple cleanliness the number of cases of ophthalmia occurring in the Dresden lying-in hospital was reduced to a figure not exceeding that attained in other lying-in hospitals by Cr  de's method of dropping into the eyes of all infants a 2 per cent. solution of nitrate of silver.

Rivi  re (*Annales de Gynecologie*, 1887, t. xxviii.) thus sums up the treatment of this disease. The eye should be washed out, night and morning, with a 1 in 10,000 solution of corrosive sublimate, carefully dropped into the eye from a piece of wool soaked in it (which can then be thrown away). Then the inner surface of the lids should be painted with a 2½ or 3 per cent. solution of nitrate of silver, applied with a soft brush. If one eye only is affected, to protect the other a solution of nitrate of silver, ½ or 1 per cent., should be dropped into it night and morning.

42. Birth palsies.

Dr. W. E. Gowers, in a clinical lecture on this subject (*Lancet*, vol. i., 1888, p. 709), describes paralyses caused by injuries received during birth. By too forcible traction on the legs the spinal cord has been ruptured. The facial nerve may be injured by pressure from the forceps. This injury is seldom severe, and almost always gets well within a few days or weeks. The nerves of the arm may be damaged in several ways. It may happen from fracture of the humerus, either from displacement of the broken end of the bone, or directly from the violence which caused the fracture. It may be produced by the pressure of the end of the blade of a much-curved forceps. It may occur during

the extraction of a child in a foot or breech presentation by the point of a traction hook, or even by the finger (†) placed above the shoulder for this purpose. Power over the muscles is usually regained in a few weeks, without special treatment. There may be paralysis of central origin, due to compression of the brain in delivery. This is most frequent in first children and after difficult labours. It is due to extravasation of blood on the surface of the brain. It is permanent and not transient, but its tendency is to slow improvement. The most important diagnostic signs are that there is no history of a definite onset at any time after birth, and that the condition is not progressive. Drugs are useless, the chief treatment being the training of the muscles by proper gymnastic exercises.

Schultze (*Arch. für Gyn.*, Band xxxii.) describes a case of the second of the above-mentioned forms of paralysis, viz. that due to injury of the brachial plexus. He quotes Nonne, who believes that it is due to prolonged compression of the nerves between the clavicle and the spine, when the shoulders are very much raised as in the carrying forward the body which is part of the so-called "Prague" method of delivery, the arm being at the time up by the side of, or behind, the head. His case is one in which this mode of production seemed probable. He does not think it arises from pressure above the clavicles made in delivery by the method of Smellie, for in that case it would be frequently bilateral, which it seldom is. (The "Prague" method is only suitable when the arms have been delivered, and the head is in the pelvic cavity; then it is excellent.)

The following are the chief works on midwifery published during the year:—

ENGLISH.

The first volume of a system of midwifery by American authors, edited by Dr. Hirst. It promises to be an exhaustive and valuable work.

Spiegelberg's "Text-Book of Midwifery." Translated into English by Dr. Hurry, and published by the New Sydenham Society. The first volume is out, the second promised speedily. Spiegelberg's great work scarcely needs commendation.

Dr. Priestley's "Lectures on the Pathology of Intra-Uterine Death." A full *resumé* of all that is known on the subject.

Dr. Champneys' "Research on Artificial Respiration in Newly-Born Children." An experimental investigation, which has made our knowledge of the subject more precise and extensive than it was before.

FRENCH.

Witkowski's "Histoire de l'Accouchement chez tous les Peuples."

A book more curious than useful, copiously illustrated, describing the methods of conducting labour in all countries, civilised and savage, in ancient times and modern.

Charles, "Cours de l'Accouchement." The most considerable work on midwifery that Belgium has produced.

. GERMAN.

The first two volumes of a system of midwifery by German authors, edited by **Müller**. An elaborate work, marked by German industry and thoroughness.

Ploos, "Das Weib in der Natur und Völkerkunde." A work something like Witkowski's, but embracing not only midwifery, but social usages of all kinds concerning women. Highly curious, but of very slight and indirect practical utility.

DISEASES OF THE SKIN.

BY MALCOLM MORRIS, F.R.C.S.E.,

Surgeon to the Skin Department at St. Mary's Hospital, London.

THE advance in cutaneous therapeutics which has been made within the last year is small. The most practical article, from a pathological and therapeutic point of view, is from the pen of Dr. Unna, on eczema seborrhoicum. Two important books have been published, one by Dr. Jamieson, of Edinburgh, which contains exhaustive chapters on eczema and its treatment; the other by Dr. Radcliffe Crocker, may be said to be the best English work of reference we possess.

I. Eczema seborrhoicum.

Dr. P. G. Unna, of Hamburg (*Monatsh. f. Prakt. Dermatol.*, Bd. vi. No. 18, 1887; "Report of the Ninth International Medical Congress at Washington"), insists on the right interpretation of the pathology of seborrhœa, and refers to his article, "*Was wissen wir von der Seborrhœe?*" and, as a result based on that article, affirms that what has hitherto been classed together as seborrhœa are two entirely different things; that there *does not exist any hyper-secretion of the sebaceous glands* which can clinically, with justice, be considered as a so-called dry seborrhœa, due to a deposit upon the surface of firm products of the sebaceous gland; that the group designated seborrhœa oleosa, which is the only genuine seborrhœa, consists of a true fatty hypersecretion, which, however, proceeds not from the sebaceous but the sweat glands, and would be termed more appropriately "hyperidrosis oleosa;" that all other forms of the so-called dry seborrhœa, with the exception of vernix caseosa and pityriasis tabescentium (provisionally excepted), are "chronic inflammatory processes of the skin, and anything but a hypersecretion of the sebaceous glands;" that pityriasis capitis, regarded by Unna as essentially identical with seborrhœa capitis, and which plays an important part in the rôle of eczema seborrhoicum, is of this nature.

That the source of this fat, which is not only deposited upon the surface, but infiltrates the whole thickness of the corium and epidermis, is the sweat glands, is proved by four histological facts :—

1. The identity of the fat which is found in the cutis, epidermis, and scales with that in the sweat glands.
2. The inflammatory changes, hypertrophy, and the signs of increased activity in the sweat glands.
3. The dilatation of sweat pores within the thickened epidermic masses.
4. The constant increase of the normal products of the sweat glands in the fatty subcutaneous tissue.

The clinical description may briefly be considered as follows :—

1. Eczema seborrhoicum almost invariably starts upon the hairy scalp as a latent catarrh, the first traces being the sticking together of the horny layers, sensible exfoliation of scales, abnormal distribution of oily matter, and drying of the hair through blocking of the mouths of the follicles.

2. It has remarkable predilections for certain positions, which are :—(1) Scalp ; (2) forehead at junction with hairy scalp, temples, ears, neck, nose, corona around mouth ; (3) sternum ; (4) axillæ ; (5) arms (flexor surfaces) ; (6) abdomen and chest and back ; (7) legs ; (8) hands and feet ; (9) intertrigo positions ; (10) buttocks.

3. It usually spreads from the scalp *downwards*—over temples, ears to neck, sternum, axillæ, etc., and assumes one of three forms. These forms are :—(1) As a progressive slight scaliness of scalp (pityriasis capitis), with progressive baldness (alopecia pityrodes) :—“*the scaly form.*” (2) As a progressive baldness, with heaping up of scales on the scalp and appearance of a corona seborrhoicum at the junction of forehead with the hairy scalp, spreading to the temples and ears, or skipping over to region of the nose and cheeks ; particularly apt to occur on sternum :—“*the crusty form.*” (3) “*The moist form,*” in which weeping occurs, is especially apt to attack the temporal regions and ears ; the fatty scales are lost, and the part looks red, moist, and shining.

The lesions most typical of eczema seborrhoicum are circular or oval red patches of the size of a finger-nail, fading in the centre, the red colour of which is masked by a covering of yellowish crumbling scales. The margin consists of prominent red papules. Groups of such patches or rings form and coalesce with one another till a festooned figure is formed. It is characteristic of eczema seborrhoicum that it tends to assume certain forms in certain parts of the body : *e.g.* the scaly form on the

scalp and face ; the moist in the axillæ, temples, ears, back of hands and fingers, and intertrigo positions ; the crusty form on the trunk. On the palms and soles it resembles psoriasis guttata, and passes into a peeling condition, but does not weep. The scaly or crusty forms which occur in the beard or moustache are not accompanied by falling out of the hair. On the nose, forehead, and cheeks, red papules with congestion may prevail, with pityriasis capitis, and, unless cured, passes into acne rosacea. The nails are seldom attacked. The disease is cosmopolitan.

The differential diagnosis is from—I. Pityriasis rubra, by the thickness, yellowish colour, crumbling nature, and fattiness of the scales, and further by its benignity. II. From psoriasis, with which it is especially apt to be confounded—by (1) mode of spreading from head downwards, instead of from knees and elbows as in psoriasis ; (2) the never failing previous history of a seborrhoeal affection ; and (3) the fatty crumbling character of scales in contra-distinction to the dry silvery ones of psoriasis.

Treatment.—This must be commenced on the scalp and is most important. Dr. Unna gives the palm to sulphur, considering it "almost a specific," and combines it with zinc as a salve, to be applied *continuously* as a salve mull. It is especially valuable in the moist form, but good in all. In the crusty and scaly varieties, chrysarobin, pyrogallol, and resorcin, act more energetically. Ichthylol is not so active as sulphur. Salicylic and boracic acids are valuable additions to resorcin. Tar and lead are contra-indicated. Internal measures are not generally necessary.

2. Recent methods of treatment of eczema.

Veiel (*Monatsh. f. Prakt. Derm.*, No. 4, 1888 ; and *Lond. Med. Rec.*, June, 1888) rejects viola tricolor, mercury, iodine, ergotine, and calcium sulphide as useless. Arsenic he sometimes uses in combination with external treatment. In one case he has known it produce acute eczema. In the scrofulous eczema of childhood he finds cod-liver oil internally excellent, but externally as of no more use than any other fat. In cases of severe itching he gives chloral, iodide and bromide of potassium, and sometimes even subcutaneous injections of morphia. Internally carbolic acid is useless. In acute eczema, before it becomes moist, he praises zinc gelatine, and above all the zinc glycerine gelatine of Unna. When zinc gelatine is not borne, he covers the parts with cold dry starch-powder in gauze bandages. Pillows full of starch-powder are kept cold by indiarubber bottles filled with ice and salt. Of the pastes, he recommends Lassar's zinc salicylic paste, and praises the zinc muslin ointments and the lead muslin ointments of Beiersdorf.

3. The treatment of eczema by permanganate of potash.

Dr. Lawrance (*Journ. Amer. Med. Assoc., Ann. de Dermatol. et de Syph.*, vol. iii., 1887; and *Lond. Med. Rec.*, March, 1888), reports the cure of a case of chronic eczema of the fingers in a woman, which had resisted all ordinary remedies, by the application of permanganate of potash (2 per cent.). He states that under this treatment the disease disappeared completely in twelve days. Further experiments with the same treatment gave him in every case satisfactory results.

4. Resorcin in chronic eczema.

Schmitz (*Therap. Gaz.*, June, 1888; and *Amer. Journ. Med. Sci.*, 1888, p. 202) reports favourably on treatment of two obstinate cases of chronic eczema by means of applications of resorcin. The remedy was employed as a solution in glycerine, a half-ounce of the former to four ounces of the latter. The patients were young children, and the disease chronic and more or less general. The affected parts were painted twice daily with the above solution, improvement thereafter being steady and continuous.

5. Post-eczematous furunculosis.

Unna (*Monatsh. f. Prakt. Dermatol.*, No. 3, 1888; and *Amer. Journ. Med. Sci.*, 1888, p. 425) advises for the mitigation or relief of this complication the admixture of carbolic acid or thymol in the applications used for the eczema. The addition of a minute quantity of corrosive sublimate to oxide of zinc ointment, aided by the administration of calcium sulphide, may be considered, however, the most certain method to adopt in cases in which boil formation is likely to occur.

6. Bromide of arsenic in psoriasis vulgaris.

Ilün (*Russkaia Med.*, No. 48, 1887, p. 790; *London Med. Recorder*, June, 1888) has obtained brilliant results with Prof. Corbett's treatment in two cases. The method consists in the internal use of a solution of bromide of arsenic (1 grain) in alcohol (2 ounces), with simple syrup (8 ounces), the dose being a teaspoonful taken two or three times daily after meals. Cases that had resisted Fowler's solution and other ordinary methods were followed in a fortnight by profuse desquamation, rapid healing of fissures, and complete restoration to health. The only trace left by the affections was a brown discoloration of the spots once affected.

7. The treatment of psoriasis.

Spender (*Lancet*, 1887, ii. 366) recommends for common diffuse psoriasis thermal baths of the Bath mineral waters. He claims that adults and children who come white as snow, and scaly as hoar-frost, often leave Bath in six weeks with the skin

physiologically sound and tolerably pure. Nothing within the range of balneo therapeutics is more trustworthy than this.

8. *Pemphigus pruriginosus*.

Secretan (*Revue Méd.*, No. 4, 1888) gives an account of a case of the above treated successfully by applications of carbolised water. The patient, a man, exhibited blebs of various sizes distributed generally about the body and in all stages of development. The lesions covered in all nearly half the surface. The eruption appeared in outbreaks accompanied by elevation of temperature. As soon as one crop had nearly disappeared, a recurrence would take place. The patient was greatly enfeebled, both by the direct draining effect of the disease, as well as by the intense and persistent itching. The ordinary remedies were tried and failed, and finally compresses soaked in a one per cent. carbolic solution were applied, with almost instant relief to the itching, and with gradual improvement in all the cutaneous symptoms. The new blebs were abortive; and in four or five weeks after these applications had been ordered, the patient was discharged from the hospital cured. In the beginning it was necessary to discontinue the applications for hours or days, from toxic symptoms arising. The author suggests that the therapeutic result of the carbolic acid applications agrees with the microbe theory of the disease advanced by Gibier.

9. The treatment of leprosy.

Unna (*Journ. of Cutaneous and Genito-Urinary Diseases*, vol. v. No. 10) has lately applied to the surface of leprous infiltrations an ointment containing 5 per cent. chrysarobin and 2 per cent. salicylic acid, and in order to combat the action of the salicylic acid in laying bare the skin, he adds 5 per cent. ichthyol. This ointment he applies to the arms, legs, and trunk. For the face he uses pyrogallol, ichthyol, $\bar{a}\bar{a}$ 5; acid. salicyl., 2; lard, 100. In making continuous use of these drugs for a long time, especially when pyrogallol is largely used, he administers internally half a dram of dilute hydrochloric acid to counteract the deleterious effects of pyrogallol on blood. For children, women, and persons with delicate skins, and for application to the genital regions and flexor surfaces, he uses chrysarobin, ichthyol, $\bar{a}\bar{a}$ 5; acid. salicyl., 2; lard, 100; or ichthyol, 10; acid. salicyl., 2; lard, 100. For old-standing leprous infiltrations of skin he uses the salicylic acid and creasote plasters.

10. The treatment of alopecia pityrodes.

Unna (*Monatsh. f. prakt. Dermat.*, No. 6, 1888) recommends for this disease rubbing the head at bedtime with an ointment of resorcin (1 in 15). The head is then to be covered by an

impervious cap, and the ointment to be rubbed off in the morning with a dry cloth. Once a week the scalp is to be washed with alcoholic solution of soft soap.

11. The treatment of callosities and warts.

Roesen (*Monatsh. f. prakt. Dermat.*, No. 7, 1888) recommends salicylic acid in substance, as a quicker and more energetic remedy than when dissolved in collodion. Epidermic structures should be moistened with a solution of salicylic acid, then covered with a thick layer of pure crystallised salicylic acid. On the top of this is placed moistened boracic lint, and a piece of guttapercha tissue fastens the whole in position. If the callosities or warts are not too large, the bandage is allowed to remain five days, after which the structures are found shrunken and completely separated from their base of uninjured skin. When very thick, as in hypertrophied toe-nail, the bandage is allowed to remain ten days, or is renewed after the fifth.

12. The treatment of epithelioma and lupus by lactic acid.

Doyen (*Ann. de Dermat. et de Syph.*, No. 2, 1888) records his experience of this method originated by Moorhof. Of three cases of lupus, one was cured in three months, and the cure had been maintained for a year. Another, in which an apparent cure had taken place, was still under observation. The other patient was still under treatment. The author states that, contrary to the remarks of Moorhof, lactic acid does not absolutely spare the healthy skin; but by watching its action from day to day a slough can be avoided. Lactic acid of the consistence of syrup is applied by means of absorbent cotton, and is allowed to remain in place from fifteen to twenty minutes. After being removed, the part is carefully wiped with soft cotton. Before being applied, the circumference of the part is protected by resinous plaster or by lanolin. The treatment is not painful, and applications are made daily. When sufficient destruction seems to have taken place, the part is washed with an antiseptic solution, and is dressed daily with an ointment of nitrate of silver. The cicatrices are smooth and rose-coloured, and gradually become paler without contraction—a result due to the fact that lactic acid acts chiefly on the diseased products of the skin.

13. The treatment of epithelioma with mild caustics.

D. Lewis (*Journ. Cut. and Gen. Urin. Dis.*, New York, Jan., 1888) describes cases in which mild applications—such as nitrate of silver, pyrogallic acid, and resorcin—were followed by rapid increase of the malignant growth, and that they should never be applied; and that the only caustics suitable are those

which destroy the vessels and lymphatics adjoining the affected surface.

14. The treatment of lupus vulgaris.

Unna (*Monatsh. f. prakt. Dermat.*, No. 4, 1888) recommends as a useful and efficacious remedy against lupus nodules, and one that requires little preparation, the use of small wooden tooth-picks covered with wadding soaked in a fluid of the following composition:—Perchloride of mercury, 1; carbolic acid or creosote, 4; spirit, 20. At each sitting, beginning at the outer border, about ten small lupus-nodules are selected for treatment. These are cut with a lancet to about the depth of two millimetres, and immediately bored with a toothpick covered with the wadding and soaked in the fluid. The wadding on the end of the toothpick is inserted, and by a turning movement the fluid is brought in contact with the diseased tissue. After two or three days little is to be seen either of the small holes or of the lupus which had been treated, and ten new nodules are selected. Unna states that this treatment is more advantageous than the old custom of boring with solid nitrate of silver, being less painful and more efficacious.

15. Injections of corrosive sublimate in the treatment of lupus.

Tausini (*Monatsh. f. prakt. Dermat.*, No. 8, 1888; and *Lond. Med. Rec.*, June, 1888). In a young woman who, for two years, had suffered from obstinate lupus hypertrophicus of the point of the nose, Tausini injected corrosive sublimate solution. Formula—corrosive sublimate, .50; salt, 1.00; water (distilled), 100.

The first injection was made with a few drops of this solution without any particular result. Four days later two further injections were made with a double amount of sublimate and salt. Thereon there appeared local swelling, and slight painless œdema of face. After two days the œdema and tumefaction of nose disappeared. Later, at different intervals, further injections were made, partly into the middle of the affected part, and partly into its periphery, the reaction in no case being extreme. Even after the first injections an improvement took place, the skin over the affected part being paler and smoother. The nose soon returned to its normal condition.

16. Influence of diet in the preventive treatment of skin diseases.

White (*Journ. Cut. and Gen. Urin. Dis.*, Nov., 1887). Restrictions usually prescribed are quite arbitrary, and vary in different nationalities. Fish, for example, is often prohibited, especially in eczema, and yet there is not a recorded case of

skin disease caused by the eating of sound fish. Dr. White forbids (1) alcohol, which, besides causing rosacea, and acute impetigo, aggravates the course and intensity of most inflammatory affections of skin; (2) acid fruits which cause a tendency to eczema, as strawberries, pears, grapes; (3) apples may give rise to acneiform, impetiginous or ecthymatous eruptions about mouth; (4) walnuts and other nuts often cause soreness of mouth, and perhaps of lips and surrounding parts; (5) shell-fish notoriously produces urticaria, and other meats produce same results in people who have idiosyncrasies to them.

17. Brine baths in the treatment of some skin diseases.

Piffard (*Journ. Cut. and Gen. Urin. Dis.*, vol. v. p. 421) has found weak brine baths often of service. In acute moist eczema it is well known that a bath in plain fresh water, with or without soap, usually aggravates the local lesions, due, he believes, to the absorption of water by the exposed prickle layer of the epidermis. If, however, from half a pound to a pound of salt be added to the bath (25 gallons), these effects will in a great measure be obviated, and the patient will state that his skin feels better after than before the bath. Thorough cleansing of the surface may thus be obtained without the usual inconveniences. In subacute eczema, in psoriasis, in furunculosis, in irritable summer rashes (whether of a papular or pustular character), in urticaria, and in various forms of scrofulosis, and in pustular and ulcerative syphilides, the five per cent. bath (10 pounds of salt to 25 gallons of water) is to be recommended, not only as a great source of comfort to the patient, but as unquestionably a therapeutic agent of great utility. In prescribing these baths, he usually directs that the water be as hot as can be comfortably borne during an immersion of from fifteen to twenty minutes.

18. The surgical treatment of skin diseases at the St. Louis Hospital in Paris.

Brocq (*Journ. Cut. and Gen. Urin. Dis.*, March, 1888) contributes an account of the noteworthy methods of treatment by quadrilateral linear scarification of Vidal. After pointing out previous attempts in the same direction, and describing Vidal's scarifier, he gives the details of operating, method of preventing hæmorrhage, and producing local anaesthesia. This method is especially useful in tuberculous lupus.

Vidal has demonstrated during the past eight years that the advantage of this method is that in skilled hands it produces an almost perfect cicatrix; while in scraping, the use of the thermocautery and electro-cauterisation, and especially with caustics,

depressions, loss of substance, cicatricial bands, and irreparable deformities are produced; while with scarification, when a cure has been obtained, the region which has been attacked can scarcely be distinguished. The skin regains its normal suppleness, its form, and its colour. As long as bright redness persists towards the borders of the neoplasm, we must fear the cure is only apparent. The patients should present themselves for examination every two or three months to prevent recurrences, by having all small tubercles which might reappear destroyed at once.

Vidal's treatment of linear quadrilateral scarification has yielded good results also in erythematous lupus, in seborrhœa oleosa, in rosacea, in sycosis, in painful keloid, in chronic eczema accompanied by thickening of the skin, and sometimes in pachydermia (either smooth or warty), in cutaneous ulcer (in which the borders are very thick, hard, and elevated), and also in obstinate pruritus. The scarifier is held like a pen, but the incisions should be made perpendicular to the surface. When the first incisions have been made, a second or third series is made parallel to the first; then the first series of rectilinear lines is crossed by other rectilinear lines placed at the same distance from each other as the first ones. This second series can be crossed by a third and fourth. The depth, distance between incisions, and length, vary according to the nature of the affection and the particular case.

Brocq (*Journ. Cut. and Gen. Dis.*, July, 1888) prefers for lupus a combination of Vidal's method with a subsequent use of Van Swieten's solution; and if some spots persist obstinately, he applies the galvano-cautery to them. He recommends changes in local treatment in a long-standing case of lupus.

19. Mechanico-surgical treatment of skin diseases.

Munro (*Journ. Cut. and Gen. Urin. Dis.*, April, 1888). Many symptomatic cutaneous disorders which are entirely refractory to drugs are often readily amenable to local treatment; and it is to the recognition of this fact that the Vienna School of Dermatology has won such remarkable prestige. These diseases in which mechanico-surgical treatment is rationally indicated, and gives the best results, are hypertrophies and neoplasms; but also in some parasitic, glandular, exudative, and neurotic diseases. Munro then mentions a long list, including acne, angioma, alopecia, callosities, clavus, carbuncle, condylomata, elephantiasis Arabum, epithelioma, etc.; and he then considers in great detail lupus as the disease in which an almost infinite variety of mechanical and surgical processes may be used with benefit.

The methods in vogue he classifies as—

First.—Irritant substances, as iodine, acids, and mercurial preparations.

Second.—Cauterisation (general or interstitial) by potential caustics or actual cautery.

Third.—Excision *en masse*, or partially.

Fourth.—Multiple punctures and scarifications; or by a combination of two or more of these methods.

Munro unhesitatingly affirms his preference for Vidal's method of linear scarification, carried out in all its details, over the other methods of treating lupus.

DISEASES OF THE EYE.

BY HENRY POWER, M.B., F.R.C.S.,

Ophthalmic Surgeon to St. Bartholomew's Hospital.

1. Asepsis and antiseptis in ophthalmic surgery.

The views entertained at the present day in regard to these means of avoiding disease are that asepsis is more important than antiseptis, so that the old maxim, *venienti occurrere morbo*, is fully supported by modern experience. M. Abadie (*Compte Rendu de la Société Française d'Ophthalmologie*, 10th May, 1888), in a paper on this subject read before the French Society of Ophthalmology, remarked that it was extremely important in ophthalmic surgery to prevent the entrance of microbes. This, he thinks, may most readily be accomplished by boiling all instruments in water, and by washing out the conjunctival sac with a solution of boiled boric acid, but he thinks that intra-ocular injections after cataract operations are harmful, and should not be practised. If in spite of all precautions the lips of the wound present indications of commencing suppuration, the antiseptics, such as carbolic acid, corrosive sublimate solution, and iodoform, are not well borne by the eye; and he has found the most efficacious means of arresting inflammation and its consequences, the light and dexterous touch of the galvano-cautery heated to whiteness, and this application may be repeated every eight hours. In a discussion on this paper, M. Vacher stated that he simply plunged his instruments into boiling water, washed out the anterior chamber after cataract operation, and if pain or discomfort was felt for more than a few hours after the operation, he undid the bandages, examined the wound, and if suppuration appeared imminent he used oxygenated water and tincture of iodine, which he applied lightly with a brush. He objected to iodoform, as the powder was apt to get between the edges of the wound and hinder cicatrisation. M. Panas thought the temperature of boiling water insufficient to *kill all microbes*, and thinks much danger results from the bubble

of air which sometimes gains entrance into the chamber. Hence he prefers to sterilise this bubble, and consequently injects. A temperature of 120° C. kills all microbes; but on the other hand, it spoils the temper of the knife and renders it unserviceable.

2. Bacteriological studies, with a view to the determination of the best antiseptic for ophthalmological use.

M. Chibret (*Galezowski's Recueil*, Sept., 1888, p. 562) has recently devoted much time to a most minute and careful research on the relative value, as antiseptics, of different mercurial solutions. He has arrived at the conclusion that the best antiseptic for ophthalmic purposes is a solution of 1 in 500 of the oxycyanide of mercury. It is slightly alkaline, like the tissues generally, scarcely attacks the metals, and is well borne by the tissues. It is especially effective in preventing the development of the staphylococcus aureus; being superior to the solution of the perchloride of mercury in the proportion of 14 to 13. In sterilising culture experiments, the solution of oxycyanide of mercury is sometimes more powerful than the perchloride, and its action is more persistent. It is of great service in rendering the conjunctival sac aseptic, and though it cannot be expected to prevent the growth of all microbes, it arrests the development of the majority. M. Chibret finds the mixture of broken-down lens and aqueous humour very favourable to the growth of the microbes, which induce inflammation, and he considers it a good plan to asepticise the anterior chamber after operations for cataract. He accomplishes this by allowing a solution of 1 to 500 of the oxycyanide of mercury to drop upon the wound, and then by separating the lips of the wound to permit it to enter into the anterior chamber. Stronger solutions containing 1 in 100, are excellent for disinfecting instruments.

3. Naphtol in the treatment of purulent ophthalmia.

At the sitting of the Société de Biologie of the 19th May, 1888, Dr. Budin, the *Professeur agrégé d'Accouchements à la Faculté* (*Galezowski's Recueil d'Ophthalmologie*, Sept., 1888, ser. 3, No. 9, p. 518), read a paper tending to establish the antiseptic value of naphtol in the treatment of the purulent ophthalmia of new-born children. M. Budin treated cases of this form of conjunctivitis by the simultaneous employment of cauterisation with silver nitrate, and with compresses dipped in a watery solution of naphtol containing 1 part in 2,500; the naphtol employed was the naphtol β . Under the influence of this treatment the

improvement was notable and general, and at the end of ten or twelve days the cure was complete. Recognising the advantage of antiseptic treatment in cases of purulent ophthalmia, M. Valude undertook some clinical researches on the value of naphthol, and tried it in four cases of blennorrhagic conjunctivitis in the adult with different degrees of intensity and with more or less severe corneal implication; two cases of purulent ophthalmia occurring in children from five to seven years of age, and scrofulous; and in six cases of blennorrhœa monotorum. M. Valude preferred to use the naphthol α rather than the naphthol β , as it has twice the antiseptic power. The first solution he used had the following composition: Distilled water, 1000 grammes; naphthol α , 0.50 gramme; alcohol, 25 grammes; the alcohol being added to favour the solution of the naphthol. Glycerin might be substituted for it. Subsequently he employed a lotion composed of naphthol 0.20, water 1000 parts. The results obtained were very encouraging. In the case of the infants, M. Valude was astonished at the rapidity with which the palpebral swelling disappeared, whilst the discharge did not seem to be materially altered, nor was the redness of the inner surface of the lids materially changed on the application of the solution of naphthol. In the adults on whom he experimented he used two cauterisations daily of silver nitrate of a strength of 3 per cent. in three men, two of whom made a good recovery, whilst the third had a perforating ulcer; whilst in two women, one was cured in eight days, silver nitrate cauterisations being added; whilst the other recovered with a slight adherent leucoma. In a discussion which took place on the reading of the paper, M. Parent very justly remarked that he had tried many antiseptic plans of treatment for purulent ophthalmia, such as salicylic acid, carbolic acid, benzoate of soda, chlorine water, and others; but what was really wanted was comparative trials to ascertain which was the most rapid and effective.

4. Stenocarpin or Gleditschin a new local anæsthetic.

The *Medical Record*, Oct. 1, 1887:—"This substance is obtained from *Gleditschia triacanthos*, a plant which has been carefully described by J. Herbert Claiborne, jun., M.D. It is indigenous in America, and grows in the woods of Pennsylvania, in Virginia, and Illinois. The juice is employed in Louisiana in the manufacture of beer. The active principle was obtained by Goodman, who named it "gleditschin," and regarded it as an anæsthetic, which forms a ropy fluid of greenish colour. Claiborne found it useful in iritis, and in cases of intolerance of light accompanying trachomatous pannus or phlyctenular keratitis. It

is capable of arresting or removing spasm of the accommodation. He obtained uncertain results from subcutaneous injections, in some instances anæsthesia being apparently induced, in others not. Taken internally it produced distinct toxic effects. The best strength is about $\frac{1}{5}$ per cent. Some doubt seems to exist as to whether it is a separate and independent alkaloid or a mixture of cocain with duboisin or some other substance. Claiborne saw mydriasis from its use, but did not notice any anæsthetic action on the conjunctiva.

5. Erythrophlein as a new local anæsthetic.

Centralblatt f. Augenheilk., Jan., 1888. In a memoir read before the Berliner Medizinische Gesellschaft, Hr. L. Lewin stated that he had received from Messrs. Christy an amorphous mass named "haya," which had been received by them from Africa. It contained some iron, apparently from adhesion to the point of an arrow; the remainder dissolved easily in water. The solution was of a brown colour, alkaline reaction, and gave a precipitate with the tests for alkaloids. Believing it to be a kind of arrow poison, he dropped some of the solution into the eyes of animals, and found that in the course of twenty minutes it had established a condition of complete anæsthesia, which lasted for from ten to twenty-four hours. During this period the animals remained in a natural condition; the cornea did not become cloudy, but remained absolutely insensible to all kinds of injury. Injected subcutaneously in frogs, the pulse fell from thirty to eight per minute; and subsequently paralysis supervened. Careful examination showed that the poison was identical with a substance Lewin had experimented upon some years previously, and was obtained from the *Erythrophlœum judiciale*, used as a guilt ordeal on the West Coast of Africa. The *Erythrophlœum judiciale* is a tree 100 feet in height, growing in Senegambia. Lewin found that even in dilute solutions the alkaloid erythrophlein is irritating, producing considerable conjunctivitis; injected into the limbs it appeared to cause complete anæsthesia.

6. Erythrophlein in ophthalmic surgery.

(*Archives d'Ophthalmologie*, t. viii. No. 2, p. 161, 1888.)

The discovery of the value of cocain in the treatment of ophthalmic diseases has naturally led to the trial of other substances, though it is improbable that any will be found which will effect the purpose of rendering the conjunctiva and cornea insensible to the knife and to caustics more perfectly, quickly, and with more complete absence of after ill effects; the only evil consequence that has hitherto been attributed to cocain is the separation of the corneal epithelium when the solutions have been

strong or used for too long a period—a trivial objection, since the anæsthetic effects are well marked with two or four per cent. solutions, and after their instillation for only fifteen to twenty minutes. Amongst such substitutes, some attention has been directed to erythrophlein, a substance the composition of which is uncertain; and a memoir has recently been written upon it by Prof. Panas, and presented to the Academy of Medicine in Paris. M. Panas states that he was informed by M. Hardy, the chemist, two years ago, that the powder of erythrophlein occasioned in him sneezing, pricking of the conjunctiva, and, which was more curious, sparks and flashes in his eyes. M. Panas immediately began to experiment with it; and, having made a decoction, injected it into the eye of a rabbit. It instantly induced sharp bulbar and palpebral conjunctivitis, with photophobia and lachrymation, slight loss of polish of the cornea and incomplete anæsthesia of the eye, which was certainly much inferior to that produced by cocain. No effect was produced upon the pupil or the deeper structures of the eye. In view of this and other experiments, M. Panas came to the conclusion that it was not likely to supersede cocain as an anæsthetic; but he thought it might prove serviceable as a remedy in cases of granular lids with pannus of the cornea; but its effects do not appear to have been at all satisfactory, since solutions containing 1 in 500 produced periorbital and facial pain lasting for some hours without material improvement in the condition of the lids or of the cornea.

The action of erythrophlein has also been experimented upon by several other observers (Med. Soc. of Berlin, Jan. 11, 1888), who injected a solution of 1 in 500 into the interior of the eye, and found the cornea became anæstheticised; but, if the strength of the solution rose to two per cent., the cornea became inflamed and opaque. Koller, by whom cocain was introduced, read a paper on the subject to the Imperial Society of Vienna, Feb. 17, 1888, and stated that 1 part of the drug in 400 injected into the conjunctival sac of a dog quickly caused redness of conjunctiva, especially in the ciliary region, and pain. Half an hour afterwards the cornea was completely destitute of sensibility. He then tried it upon himself, with a solution having a strength of 1 in 1200. In the course of a minute he experienced a burning sensation, which radiated over the face on the same side, whilst for forty minutes the conjunctiva was injected; complete anæsthesia was produced, which lasted for several hours. The cornea became *hazy*, but the effects disappeared in the course of three days. *It is possible that some combination of erythrophlein may be*

discovered which will prove serviceable; but at present its eligibility as an anæsthetic is clearly negatived.

7. The surgical treatment of trachoma.

Dr. Schneller, of Dantzic (*v. Graefes Archiv f. Ophthalm.*, Band xxx. H. iii.), recommends the following procedure in cases of trachoma, which have resisted ordinary means:—The affected eyelid is to be completely everted after being thoroughly washed with a solution of perchloride of mercury containing 1 part in 5,000, the patient being directed to look upwards or downwards according to whether the lower or the upper lid is to be operated on. By slight pressure with the tip of the forefinger the fold of the conjunctiva forming the sinus can be made to project. This fold is seized with forceps of special form, which Dr. Schneller has devised, and a portion 2 to 4 mm. in breadth excised along the whole extent of the base of the lid. After the operation the lid should be covered with cold-water compresses, the wound and adjoining part of the conjunctiva being thoroughly cleansed with a 1 in 5,000 solution of corrosive sublimate. Both eyes should then be closed for three or four days. The results appear to have been highly satisfactory.

8. Treatment of scleritis.

In a memoir on this subject M. Dufour, of Lausanne (*Archives d'Ophthalm.*, t. viii. No. 3, 1888, p. 255), read before the French Ophthalmological Society, at Paris, remarked that the principal cause of scleritis is undoubtedly rheumatism. The disease occurs most frequently in winter, and recovery often takes place in those who winter in the south of Europe. Still there is a gouty element, as appears from the relative frequency with which it occurs in the rich as compared with the poor, and the fact that the urine often deposits uric acid. He tried, without much success in such cases, a large number of the remedies usually prescribed, such, for example, as quinine, arsenic, arseniate of quinine, the iodides, mercurial and alkaline remedies, sudorifics and the salicylate of soda, massage and scarifications. At length he employed the salicylate of lithia, and with the best results; and he accordingly strongly recommends the adoption of this remedy in scleritis. In the discussion which followed the reading of the paper, M. Grandclément praised highly the effects of the injection of antipyrin into the temples, and stated that he had employed the remedy with great advantage in all ophthalmic affections accompanied by ciliary neuroses, such as keratitis, iritis, and irido-choroiditis. M. Darier described a particular form of scleritis to which he applied the term *sclérite boutonneuse* or nodular scleritis, in this form of disease, which certainly resembles episcleritis, though he

makes a distinction between the two. A little elevation of the size of the head of a pin appears without hyperemia on the surface of the sclera. The conjunctiva moves freely over it. The swelling increases, the apex remaining white, whilst the base becomes intensely congested with tortuous vessels. Those which were nearest to the border of the cornea were surrounded by a nebulous area, which advanced like a wave towards the centre of the cornea, and produced leucomata, notwithstanding they were actively treated by means of hot compresses and atropin locally, and by the internal administration of salicylate of soda. They recovered under general mercurial inunctions, and a relapse was cured by the infraction of mercurial lanolin into the cornea itself. **M. Panas** stated that he was perfectly satisfied in such cases with the salicylate of lithia, which he had used for some years, and with which he had obtained excellent results.

9. Treatment of leucoma.

In the *séance* of the 10th May of the Société Française d'Ophthalmologie, **M. Costomiris**, of Athens (*Compte Rendu*, sixième session), stated that he desired to draw attention to a therapeutical proceeding he had practised with success, which was of high antiquity. Mention is made of its employment in the temples of *Æsculapius* by *Aristophanes*, and in the recitals of cures graven on the columns found at *Epidaurus*. This method of treatment has also been preserved for ages amongst the Greeks, and **M. Costomiris** used it for the first time in an almost hopeless case of adherent leucoma with increased lesion and complete blindness, when all rational treatment was declined by the patient and his friends. Surprised at the excellent result he obtained, he has employed it in wounds of the cornea, in pannus, and in parenchymatous keratitis, in chronic ulcers, and in a case of keratoconus, and, he adds, it has not seemed to him unworthy of its ancient reputation. The proceeding in question consists in licking the cornea just as the dog licks the eyes of its little ones. In Greece one of the members of the family betakes himself to this service, and as a preparation for the act, masticates some rue. He recommends its adoption.

10. Treatment of keratoconus.

At the Academy of Medicine at Paris, **M. Panas** showed in **M. Kall's** name (*Centralbl. f. Augenheilk.*, 1888; and *Practitioner*, vol. xli. p. 139) a series of glass shells which **M. Kall** has employed with advantage in the treatment of keratoconus or conical cornea. The shells are made of various curvatures, and are applied directly to the surface of the cornea, by which they are well borne for many hours consecutively, the slight irritation

they at first produce soon passing off. They follow the movements of the eye, and adhere firmly to the cornea by atmospheric pressure. If the curvature of the shell be well chosen, the projecting state of the cornea can be reduced till the eye becomes almost emmetropic, and the sharpness of vision can be improved to a natural extent over the whole field of vision. Thus, in one instance, the patient who before this treatment was commenced could scarcely count fingers at the distance of half a metre, was able, after it had been practised for some time, to recognise test types one inch high at a distance of sixteen feet. In a paper on the same subject, M. Fieuzal (*Compte Rendu des Séances de la Société Française d'Ophthalmologie*, par E. Valude) remarked that he knew no disease more subject to variation for better or worse, often at intervals of some months. He had practised in four instances the excision of an elliptical flap of the cornea as recommended by M. Galezowski, and notwithstanding the perfect docility of the patients in three out of the four, anterior synechia had formed. There was unquestionably some improvement in vision, and no glaucomatous symptoms had supervened, though more than a year had elapsed. He had given up the operation because he found it impossible to perform it without the occurrence of these adhesions of the iris. Instead of it he had tried the application of the galvano-cautery, tracing crescents on the cornea, some of which presented their concavity towards the apex of the cone, and others towards the base, so that a compensatory contraction might result. In a recent case he had made radially-directed eschars, leaving the inner and inferior part of the cornea intact, and subsequently making a new pupil at this part. In these cauterisations the anterior chamber was sometimes opened, but no bad results had followed in his hands. M. Wecker, in commenting upon this paper, remarked that in his experience if the cauterisation were only superficial it failed in its object, whilst if it was deep the cicatrix was often very irregular. M. Galezowski still preferred his own operation of the excision of a small portion of the cornea about four millimetres long by two high made at some distance from the summit of the cone. The eyes should be kept bandaged for a fortnight. In sixteen cases on which he had operated in this way he had only seen one with anterior synechia. It was of great importance that the cut edges should be quite parallel.

II. The actual cautery in ophthalmic surgery.

M. Vacher (*Compte Rendu de la Société Française d'Ophthalmologie*, Mai, 1888) remarks that the applications of the actual cautery in ophthalmic surgery are numerous and important. The

cases proceeding from without inwards in which it has been found useful are in chronic blepharitis with ulceration, in tumours of the eyelids, and in ectropion. In certain affections of the lacrymal organs, when other means having failed, it is expedient to destroy the sac; in such cases the use of the actual cautery is preferable to caustics. In certain forms of conjunctivitis, such, for example, as pustular and granular conjunctivitis, spring catarrh, and chronic pterygium—in those forms of disease of the cornea which are named pannus, interstitial, and parenchymatous keratitis. In regard to affections of the iris M. Vacher thinks that all the diseases of the iris are advantageously treated by igneous peritomy, as are also affections of the anterior part of the sclerotic, such as keratoconus. Galvano-caustic is applicable in ptosis and in certain post-operation complications, such as prolapse of the iris and infection of the corneal wound. Lastly, in glaucoma, by effecting the division of the nerve filaments, it reduces pain, and affords notable amelioration.

12. Treatment of luxated cataract.

Dislocation of the cataractous lens, either into the vitreous or into the vitreous tumour, is indeed of not very uncommon occurrence. Such an accident is likely to lead to serious trouble, for the lens shifting its position with each movement of the eye, body, or head, not unfrequently sets up iritis, or iridocyclitis, or glaucoma, detachment of the retina, or even sympathetic ophthalmia of the opposite eye. The causes of these cataracts are diverse. They may result from some acquired affection of the eye itself, as choroiditis or cyclitis; or they may be the result of some congenital affection, as buphthalmia or liquefaction of the vitreous; or they may be of traumatic origin. Floating cataracts have been the subject of a memoir by M. Galezowski (*Compte Rendu des Séances du 6ième Session de la Société Française d'Ophthalmologie*, par M. E. Valude, May, 1888), which was read before the Société Française d'Ophthalmologie, May, 1888. The professor arrived at the following conclusions in regard to the proper treatment that should be pursued in dealing with them:—(1) Cataracts which have undergone either complete or partial luxation constitute a form of complicated cataract, which should without delay be submitted to operation, in order to prevent consecutive inflammatory accidents. (2) The method of operation which is superior to all others, and which should be adopted in all cases of luxated cataracts, is by the simple flap operation without iridectomy. (3) The section should be through the cornea in its upper part, and at some distance from its periphery. And, lastly, the curette which should be used to

extract a luxated cataract should be relatively large, and be considerably hollowed out, in order that it may more easily seize a voluminous lens.

13. Treatment of night blindness.

M. Grandclément, of Lyons (*Compte Rendu de la Société Française d'Ophthalmologie*, par E. Valude), gives a case of a young man, æt. twenty-six, who discovered by accident that the vision of his right eye, which presented nothing abnormal by day, was blind, or almost blind, by night, or by artificial light, rendering him incapable of guiding himself by means of this eye alone. Careful examination of the eye by means of the ophthalmoscope only led to the discovery of four small spots of retinitis pigmentosa near the ora serrata. The visual field presented a lacuna or scotoma at this point. Moreover, there was a colour vision defect extending over the whole of the field, yellow being called white. As probable cause of this singular defect, M. Grandclément found a traumatic hepatitis with icterus, which resulted from a fall from a horse three years previously, from which the patient had completely recovered; but no explanation could be suggested why one eye only should be affected. Various remedies were tried without success, when at length the idea occurred to him to practise injections of antipyrin, which he adopted to arrest a painful spasm of the orbicularis and of the eyelids. The first injection produced improvement in the hemeralopia; and after the fourth injection, given nine days after, it had entirely disappeared. It is possible, therefore, M. Grandclément adds, that we may have, in the injection of antipyrin into the temple, a means of relieving or of curing *essential* hemeralopia.

DISEASES OF THE EAR.

By GEORGE P. FIELD, M.R.C.S.,

Aural Surgeon to St. Mary's Hospital.

1. Boils in the external auditory meatus.

Kirchner (*Monats. f. Ohrenheilk.*, No. 1, 1887) recommends thorough antiseptic treatment for boils in the meatus of the ear. Before opening the boil he washes the meatus out with a $\frac{1}{10}$ per cent. solution of corrosive sublimate, and dries it with wool impregnated with this solution. After incision the wound is to be painted with the same solution by means of a brush (or wool pellet) three or four times daily; in the meantime the meatus is kept plugged with gauze or wadding impregnated with this salt. In persons liable to a recurrence, prophylactic painting with the following solution should be employed for several weeks—namely, corrosive sublimate .05, aq. dest. 30, glyc. 20.

Grosch (*Berl. klin. Wochens.*, April 30, 1888; and *Amer. Journ. Med. Sci.*, No. 195, 1888, p. 89) has found that a solution of acetate of alumina (1 part to 4 of water) will act most promptly in aborting furuncles of the external auditory canal. The canal should be filled with the above solution every hour, and a piece of cotton placed in the meatus to retain the fluid in the canal. The pain is said to be partially quelled in four hours, and entirely removed in eight hours, by this treatment. Its action is thus explained by Dr. Grosch:—"The acetic acid possesses the property of distending the tissues, without destroying their continuity, and also of penetrating deeply into them. The loosening thus brought about produces the desired relief to pain by removing the pressure from the terminal nerves, and with the disinfecting power of the solution brings about the desired cure by destroying the elements of infection."

[Both these methods of treatment are based on Loewenberg's theory that furunculosis is due to invasion of the tissues by *staphylococcus pyrogenus albus* (and less frequently by the varieties

albus and *citreus*), which are presumed to have gained access to the tissues through the gland ducts. Whether these organisms are the cause, consequence, or mere concomitants of aural furuncle is still *sub judice*; and it is only fair to state that the treatment by antiseptics was advocated long ago by Loewenberg (in 1880) and Politzer (in 1882). I have not found that corrosive sublimate, which is caustic and destroys epithelium, possesses any advantages over the saturated solution of boracic acid in alcohol, or carbolic acid in glycerine, or even plain glycerine. Glycerine certainly relieves tension, which is the main surgical indication; antiseptics prevent spreading by auto-infection.—G. P. F.]

2. Ivory exostosis removed from external auditory canal.

Geo. Stone (*Liv. Med. and Chir. Journal*, 1888). Instead of boring these growths with several small canals and then uniting them, it has been found by Mr. Stone that a few taps from a small chisel driven by a hammer will knock the exostosis from its attachment. When the latter is very hard, and the growth acuminate or conical, this method of cutting could not be applied to the bone, but would require to be applied at the apex of the cone first, and then, when it is removed, to successive lower layers of the exostosis.

[I may remark that it is quite unnecessary to bore through an exostosis by several small canals; my practice is to make a small pit in a growth with a small burr, and then to employ one sufficiently large to remove the whole exostosis by a little manipulation. It is well known that with a dental engine a dentist can remove as little or as much dental tissue as he wishes, and from what part of a tooth he decides on. The instrument can be used with the same facility in the external ear. The accident of slipping never now occurs in my practice, and its dangers are most effectually avoided by the use of a steel guard.—G. P. F.]

3. Adenoid growths of the naso-pharynx. — The rôle of the pharyngeal tonsil in health and disease.

William Hill, M.B. (*Brit. Med. Journ.*, Sept. 1 and 15, 1888). This author, in a paper read before the Section of Otology at the Glasgow meeting of the British Medical Association, remarks that no serious attempt has been made to ascertain the function of so constant a mammalian structure as the pharyngeal tonsil, the hypertrophy of which gives rise to post-nasal adenoid growths, so common a cause of middle ear disease in the young. Mr. Hill contends that the primary rôle of this gland, as of the faucial and lingual tonsils, is the production of leucocytes. Raw materials for manufacture are brought to the tonsil by the converging

lymphatics, which re-absorb secretions, etc., from the neighbouring mucous membrane. Should the secretions be contaminated by irritating substances, as in the course of the exanthemata, specific fevers, and other conditions, pathological hypertrophic changes will take place in the pharyngeal and other tonsils. In those patients who are the subjects of struma, syphilis, and allied states, this condition of hypertrophic enlargement of the tonsil does not undergo reduction by resolution after the acute attack, as in the healthy. The destination of the leucocytes produced by the pharyngeal and other tonsils is twofold; some reinforce the corpuscular elements of the blood-stream, whilst a large number of others constantly migrate into the crypts and pharynx, where they probably act as *scavengers*, destroying bacteria, and perhaps playing some important amylolytic rôle in digestion. Adenoid hypertrophy is due (1) to the absorption of irritating nasal and pharyngeal secretions by the neighbouring lymphatics; (2) to changes in the mucous surface of the tonsil caused by these secretions, which prevent migration of leucocytes between the epithelial cells. The importance of these points on *treatment* are that the surgical removal of the superficial portions of the hypertrophied gland enables a new and thin mucous covering to be generated, which will not act as a barrier to the migration of the *scavenging* leucocytes, so necessary for the healthy condition of the naso-pharynx and Eustachian tube, which often swarm with vegetable organisms. But the original cause of the growths, viz. the irritating secretions, must also be treated by antiseptic and alkaline douches, pigments, and gargles. Finally, the diathetic state should be carefully attended to by the administration of appropriate constitutional remedies.

[These views throw a rational light on the etiology, pathology, and threefold treatment of post-nasal adenoid growths. —G.P.F.]

4. Thrush in the middle ear.

Prof. Valentin, Berne (*Archiv f. Ohrenheilk.*, Bd. 26, Feb., 1888; and *Amer. Journ. Med. Sci.*, 1888, No. 195, p. 93) reports a case of thrush in the middle ear of a girl nine years old. The fungus was extensively distributed in the naso-pharynx, and filled the external auditory meatus. The case ultimately yielded to the local use of a ten per cent. solution of copper sulphate, which Valentin prefers to alcoholic corrosive sublimate as a destroyer of fungi in the ear. Internally, iodide of iron and malt were administered.

[Boracic acid in solution is so efficacious in buccal and pharyngeal thrush, and is at the same time so unirritating, that it

seems to me specially indicated when this disease invades the ear, as it no doubt frequently does.—G.P.F.]

5. Surgical removal of the malleus.

Dr. Stacke, of Erfurt (*Arch. of Ohrenheilk.*, Bd. 26; and *Amer. Journ. Med. Sci.*, 1888, No. 195, s. 115, p. 92) contributes ten cases of this operation, the first being performed in June, 1885. The operation is indicated in two classes of ear disease, viz. (1), in chronic otorrhœa from suppurative otitis media, with disease of the malleus and incus; (2) in chronic catarrh of the middle ear, producing deafness.

Regarding the first group, the author says there can be hardly any difference of opinion; for if the surgeon is justified in resecting a tuberculous hip-joint, excision of the hammer-bone in caries of the same is the only rational procedure.

The subsequent state of the hearing should not be considered if the operation of excision is indicated upon surgical grounds of expediency. "Even if an ear retaining still some power of hearing should become entirely deaf in consequence of the operation, the operation would still be justifiable on purely surgical grounds, because by the excision of a carious nidus the danger of loss of health, and of life too, is removed." The hearing, however, is often improved, because by the excision of the diseased malleus and incus, which often bind the stapes down firmly in the oval window, the stapes is freed, and its vibration with sound-waves once more permitted.

In the second class, cases of deafness and tinnitus from chronic aural catarrh without perforation and otorrhœa, the operation is undertaken simply to relieve the deafness and tinnitus. When the deafness is largely due to fixation of the malleus by adhesion at the promontory, excision will be followed by hearing of twenty to twenty-five feet for whispers. It can be set down as an axiom that in such cases, if the sound-conductors and the perceptive apparatus are normal, excision of the malleus will be followed by a hearing-power of twenty-five to thirty feet for whispered words. Dr. Stacke's operations were performed under anæsthesia.

6. Middle ear sclerosis.

Von Baracz (*Wiener Med. Wochens.*, March 5, 1888).—The author is strongly in favour of excising the membrana tympani and malleus for middle ear disease characterised by chronic thickening of its lining membrane, accompanied by hypertrophy and rigidity of the mucous membrane covering the vesicles.

[These communications open up the question of the artificial production of a hole in a hitherto unperforated membrana tympani

for the treatment of chronic non-suppurating catarrh. Simple puncture has failed to produce a permanent opening in the hands of Sir Astley Cooper and of every other operator down to the present day. Wreden's operation of resection of the handle of the malleus has been equally disappointing. Schwartzé went a step farther, and excised the membrane and the entire malleus. Finally, Kessel, of Prague, on the ground that even the latter operation is so rarely successful, has suggested that, in order to expect a measure of success, it is necessary to remove the annulus cartilagineus in the posterior circumference of the membrane, and to resect the sulcus tympanicus with a chisel. This has been performed by Lucae, Hartman, and Schwartzé, in addition to the above. I confess to not having contemplated this operation for non-suppurative catarrh. On the other hand, Sexton (*Amer. Otol. Soc.*, 1886) has removed the perforated membrane with the malleus in nineteen cases of intractable otorrhœa, with very satisfactory results as regards the discharge, and some encouraging results as regards improvement in hearing. The operation for this class of cases, in my opinion, stands on quite a different footing from the one previously discussed.—G.P.F.]

7. Eustachian obstruction in diabetics.

C. Miot (*Soc. Française d'Otologie*, April 15, 1887) has observed considerable diminution of the œdema and tumefaction of the mucous membrane in diabetics, after the use of the constant current.

[This mode of treatment is useful also in catarrhal Eustachian obstruction. It is always well, however, to try a 20 per cent. solution of menthol in olive oil before resorting to electricity.—G.P.F.]

8. A new method of forcing air into the middle ear.

J. Nicol (*Lyon. Méd.*, Oct. 30, 1887; and *Med. Chron.*, 1888, p. 251). Dr. Nicol calls attention to Politzer's method of driving the air through the nostrils and Eustachian tubes into the tympanic cavity whilst the patient swallows some fluid; and to Gruber's plan, in which the pronunciation of the words "heck, hick, houck," is substituted for the swallowing of some water; and advocates a new method. Urtantschich has shown by experiments that the nasal fossæ are not completely shut off from the mouth by the above methods, and Dr. Nicol makes his patients blow the cheeks out, which tends to force air through the mouth and not through the nose. The duration of the closure is also longer than when Politzer's plan is adopted, and enables the operator to increase the force of the bag gradually. By this

method, also, the patient can treat himself without the use of the bag, by simply placing one end of a suitably sized indiarubber tube into one nostril, closing the nose with the fingers, and placing the other end of the tube in the mouth, which must grasp it firmly. On blowing the cheeks out, the air passes from the mouth through the tube into the nasal cavities, and penetrates the middle ears.

[This method is simple, and sometimes efficacious; but is by no means new to the practice of some English aurists. In my experience, it is less applicable to adults than to children.—G.P.F.]

9. The treatment of otorrhœa with boracic acid powder.

F. Bezold (*Deutsch. Med. Wochens.*, 1887, No. 8; and *Med. Chron.*, 1888). Bezold, who introduced this method of treatment some years ago, reviews the objections which have been raised by Schwartze and others as to the unfavourable results which sometimes follow its use. Bezold, however, prefers it, except when the inflation of boracic acid powder into the tympanic cavity is followed by copious serous discharge and intense pain, and in those cases in which the integument shows a similar reaction.

Dr. F. M. Pierce (*Med. Chron.*, 1888, p. 502) confirms the not infrequent occurrence of unfavourable effects from this treatment, and especially when Shrapnell's membrane is perforated.

10. Chronic purulent otitis mediæ treated by lactic acid.

V. Lange (*Monats. f. Ohrenheilk.*, 1887, No. 3). Instillations of a solution of from 15 to 30 per cent. of lactic acid are greatly recommended by this author. The advantages are—a very rapid and marked diminution in the amount of the purulent excretion of the ear; and although it does not act on granulating surfaces like boracic acid, it removes the objectionable odour so often associated with otorrhœal discharges.

[This drug has also been used with success by Baratoux, Aysaquers (*Rev. Mens. de Laryng.*, 1887), and myself.—G.P.F.]

11. Means of closing persistent perforations of the membrana tympani.

Guranowski (*Archiv f. Ohrenheilk.*, Bd. 26, s. 163, 1888; and *Amer. Journ. Med. Sci.*, No. 195, p. 191, 1888) has used a 20 per cent. solution of photoxylin in five cases of perforation of the membrana tympani to close the perforation. The ear is first syringed with a boracic acid solution, and then dried with absorbent cotton. Then, under good illumination of the fundus of the

auditory canal, the edges of the perforation are painted with the aforesaid solution. This dries in ten minutes, leaving a pellicle over the perforation. A second application is now made toward the centre of the former perforation from the periphery, and then a third, and others until the entire perforation is covered with a good layer of photoxylin. The next day this new membrane will be found tight, transparent, and resistant to pressure from a probe, and to inflations by the Eustachian catheter.

Guranowski also has applied this solution to flabby cicatrices, which become firm after having been movable at each act of swallowing.

12. Foreign bodies in the ear.

Bezold (*Berl. klin. Wochens.*, July, 1888; and *Amer. Journ. Med. Sci.*, 1888, p. 533). Bezold formulates the following conclusions regarding the management of foreign bodies which may become impacted in the ear:—

1. The removal of foreign bodies from the tympanic cavity by the way of the auditory canal, regardless of the swelling of the walls of the auditory canal, and of the distension of vegetable matter, may be an impossibility from the position assumed by the foreign substance.

2. In such cases the state of the hearing is a valuable diagnostic guide; for example:—

- (a) If the existence of great hardness of hearing or absolute deafness warrant the conclusion that a recent injury to the foot-plate of the stapes has occurred, then the removal of the foreign body by means of exsection of the posterior wall of the bony auditory canal (if removal is impossible in any more conservative manner) becomes a vital indication, since the purulent inflammation almost surely attendant upon the pressure of the foreign body in this place will find its way through the opening in the oval window into the labyrinth, and thence by the aqueductus cochlea and the porus acusticus internus to the meninges of the brain.

- (b) If, however, much hearing remains, which would indicate that the foot-plate of the stapes is intact, endeavours may be made, if the foreign substance is a fruit-seed, to extract its watery parts by means of instillations of glycerine, alcohol, and ether. Also forcible injections of water through the Eustachian tube, which often succeed, may be tried, especially if we can still feel that the foreign body is movable by means of a probe.

3. If in a case of foreign body in the middle ear, whether any hearing is present or not, in addition to purulency of the middle ear, there are local symptoms of inflammation in the

neighbourhood of the irritant substance, especially in the mastoid, an expectant treatment is no longer advisable (cold, extraction of blood, etc.), as in simple suppurations, but instant opening of the antrum is indicated.

4. The endeavour to remove the foreign body immediately after the operation, which consists in taking away the outer mastoid wall, and then the posterior osseous wall of the auditory canal as far as the drum cavity, by means of hammer and chisel, is justifiable; and in the case of children—at least, in the early years of life—nothing more than precaution against rapidly-developed brain inflammation.

[I have never myself had to resort to such extreme measures as these.—G.P.F.]

13. Influence of pilocarpin on the mucous membrane of the tympanum.

Dr. W. Kosegarten, Kiel (*Arch. of Otol.*, vol. xvii. No. 2, June, 1888; and *Amer. Journ. Med. Sci.*, p. 535) gives a most interesting account of his experiments with the above drugs.

Politzer was the first to recommend this agent in the treatment of recent cases of exudative disease of the labyrinth, and in syphilis of the same, where the process had not yet become chronic. But he formerly limited its application to recent affections, and discontinued its employment in the course of a week, if no good result ensued in that time.

Kosegarten undertakes no case that cannot submit to *daily* treatment for six weeks. He injects hypodermically one centigram, and has watched the effect on the mucous membrane of the tympanic cavity. A distinct redness is seen to come in thirteen minutes after the injection in some cases, and remain visible for forty minutes; then it fades away rapidly. In some cases the redness comes on more slowly. It even appears that the secretion in the middle ear is increased during the effect of the pilocarpin. It is held that this remedy acts both upon the internal and the middle ear disease. "By means of returning hyperæmia, which may even cause exudation, there ensues pliability of the sclerosed tissues, and moistening and softening of adhesions, and in this way the unyielding conducting apparatus again becomes more capable of vibrating. When exudations had become deposited, their absorption was brought about." Politzer's want of success is attributed by Kosegarten to too short a trial of the remedy, which can be efficient only when its action is being continued.

[Although Kosegarten speaks of Politzer's want of success, I can testify to that aurist's very favourable results with pilocarpin injections in three patients who have recently come under my

observation. Pilocarpin, in my experience, produces marked results in suitable cases. I begin treatment with the daily *hypodermic* injection of 3 minims of a 4 per cent. solution of pilocarpin. The dose is gradually increased if suitably borne.—G.P.F.]

14. Meniere's disease (aural vertigo).

Lucas (*Berl. Encycl. der Gesam. Heilk.*; and *Amer. Journ. Med. Sci.*, p. 535) thus describes the course of treatment he has found valuable in these cases. At the beginning, especially in robust subjects, local blood-letting from the mastoid region, by means of Heurteloup's artificial leech, then prolonged rest in bed, seems to him an indispensable condition in the proper treatment. As internal medications, he employs chiefly subcutaneous injections of pilocarpin; ergot also may be tried. Iodide of potash is useless. Sulphate of quinine is not advisable, because it is liable to destroy hearing if given in large doses. It should not be used except as a last resort, and with full warning of its danger being given to the patient.

15. Intracranial conditions dependent on disease of the middle ear.

Barr (Presidential Address, Annual Meeting of Brit. Med. Assoc., at Glasgow, 1888. Section of Otology).—The surgical treatment of those conditions in which, as the result of ear disease, collections of purulent matter have formed in the substance of the brain, or just inside the skull, are among the most recent and striking advances of our day, since by means of it, what have hitherto been regarded as the most hopelessly fatal of all the consequences of ear disease, have been successfully dealt with.

Dr. Wm. Macewen, of Glasgow, has operated in seven cases, where he trephined and drained abscesses in the temporo-sphenoidal lobe, by which he saved five lives; Mr. Barker, of London, has recorded two similar cases; and Mr. Card, of Edinburgh, and Mr. Horsley, of London, each one. All of these were cases in which the abscesses were due to ear disease.

16. Operations of the mastoid process.

P. McBride, M.D. (*Brit. Med. Journ.*, Sept. 1, 1888, p. 475) recommends incision of the soft parts down to the bone before pus has formed in cases of acute or chronic middle ear suppuration complicated by mastoid inflammation, especially in cases of mastoid inflammation due to examples of chronic middle ear suppuration, this operation being especially useful (1) as a palliative of pain; (2) as being of the nature of an exploration of the condition of the outer layer of bone.

When he makes an incision behind the auricle, the objects he

has in view are (1) to palliate pain ; (2) to let out pus, if it be present ; (3) to save the outer layer of mastoid from injury ; (4) to find out if there is any fistulous opening which would indicate or facilitate perforation of the bone. This incision can do little for a patient whose mastoid antrum and cells are filled with granulations, carious *débris*, decomposing pus, and epithelium.

He thinks that cold applications, leeching, iodine, injection of weak boracic lotion through the Eustachian catheter, and instillations of a solvent solution of soda into the meatus, in chronic cases, should certainly have a trial before the more active remedy is resorted to. The incision should be made near the attachment of the auricle.

McBride further recommends that, in almost every case of chronic middle ear suppuration *in which head symptoms threaten*, and in which milder measures have failed, the mastoid antrum should be opened, the urgency of the operation being proportionate to the danger of the patient. Those cases in which Shrapnell's membrane is perforated are excepted.

The indications are great pain, facial paralysis, with or without rigors, optic neuritis, and symptoms of meningeal irritation, whether or not there be tenderness over the mastoid.

He suggests that the digestive ferments may be useful in cleansing the recesses of the middle ear, and especially trypsin. Papayotin in solution may also be serviceable.

17. Diseases of the ear in general diseases.

Wolf (Section of Otology, Wiesbaden Congress, Sept. 1887 ; and *Amer. Journ. Med. Sci.*, 1888, No. 195, p. 89). In addition to the well-known influence of tuberculosis, eruptive fevers, syphilis, Dr. Wolf insists on the effects of pneumonia in the production of acute otitis. Rheumatism may attack the joints of the auditory ossicles. Endocarditis, in one case observed by Wolf, produced a thrombosis in the internal auditory artery. Chlorosis, anæmia, metritis, tobacco, lead, and mercury poisoning, frequently cause affections of the labyrinth. Under these circumstances, it is incumbent to consider these facts in conducting the treatment of cases.

18. Iodol in otitis media purulenta.

Purjesz (*Centraltl. f. die gesammte Therap.*, April, 1888 ; and *Amer. Journ. Med. Sci.*, No. 195, p. 91) has employed iodol in eighteen cases of otitis media, some of which were chronic, and others acute, with satisfactory results. In acute forms, the discharge was arrested in a few days, and in chronic cases in a short time. The iodol was used twice daily, and was well borne, in spite of the irritating effects.

DISEASES OF THE THROAT AND NOSE.

By P. McBRIDE, M.D., F.R.C.P.E., F.R.S. EDIN.,

*Surgeon to the Ear and Throat Department of the Royal Infirmary, Edinburgh, and
Lecturer on Diseases of the Ear and Throat, Edinburgh School of Medicine.*

THE year just past has in one sense been an uneventful one for those who are specially interested in diseases of the throat and nose. It has witnessed the usual number of scientific and pseudo-scientific contributions to the literature of laryngology and rhinology, and yet we can hardly venture to assert that any distinct and definite therapeutic advance has been made. Considered from another point of view, however, the past year has been one of painful interest to specialists, general practitioners, and the public. The sad death of the German Emperor has naturally directed much attention to the larynx, laryngeal diseases, and particularly to the fell form of it under which his Imperial Highness succumbed. As a result of this, a large amount of literature bearing upon cancer of the throat has appeared. We shall, however, only refer to such of it as seems of most importance with reference to prognosis and treatment.

TEXT-BOOKS, MONOGRAPHS, AND JOURNALS.

Adhering to our usual custom, we shall only mention those which seem of most value, avoiding altogether works which are not purely scientific.

The following are the text-books which deserve notice :

Die Krankheiten des Kehlkopfes, by **Gottstein**. 1888. Second edition, revised and considerably enlarged.

Die Krankheiten der Mundhöhle, des Rachens und der Nase, by **Schech**. 1888. Second edition, revised and enlarged.

Vorlesungen über die Krankheiten des Kehlkopfes, der Luft-röhre, der Nase und des Rachens, by **Schrötter**. We believe that

only one fasciculus has been added since our last year's notice of this work.

Among monographs we may mention the following :

Die Heilbarkeit, der Larynxphthise und ihre Chirurgische Behandlung, by Heryng. (Enke, Stuttgart, 1887.)

Phthisis Laryngée, by Gouguenheim and Tissier.

One new special journal has appeared :

Archives de Laryngologie, de Rhinologie, et des maladies des premières voies respiratoires et digestives. Edited by Dr. Albert Ruault.

GENERAL THERAPEUTICS.

1. Local anæsthetics.

Goldschmidt (*Centralbl. f. klin. Med.*, 18th Feb., 1888) found that by means of a .1 per cent. solution of erythrophlaein—the active principle of erythrophlaeum judiciale, a poison much used in Africa, to which attention was called by Lewin, on account of its properties as a cardiac poison and power of inducing anæsthesia—he could produce absence of sensibility in the conjunctiva and sclerotic. When applied to the pharynx and mouth, however, as a solution ten times stronger, *i.e.* 1 per cent., the anæsthesia was not satisfactory. Goldschmidt nevertheless throws out the suggestion that possibly more powerful solutions may prove effective. Epstein also experimented with erythrophlaein, injecting it subcutaneously into his own person in solutions of varying strength up to 2 per cent., and found its anæsthetic action very inferior to that of cocaine. If his observations prove correct, it is probable that the hopes excited by early experiments with this drug will not be realised.

2. Lime water as a local application to mucous membranes.

Harnack (*Berl. klin. Wochens.*, 30th April, 1888), in an able article, claims for lime-water that it is both an astringent and a solvent of mucus. These properties render it extremely valuable in certain affections, among which he mentions especially chronic pharyngitis, associated with the presence of much tenacious mucus.

3. Kreolin.

This drug has been used by Schnitzler (*Journ. of Laryng.*, Sept., 1888) as an antiseptic application in diphtheritic, follicular, tubercular, and catarrhal affections of the throat, with satisfactory results.

PHARYNX AND TONSILS.

4. Impure pyroligneous acid in the treatment of chronic pharyngitis.

As this substance has of late been successfully used in
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gynecology, Weil (*Monats. f. Ohrenheilk., etc.*, March, 1888) experimented with it as an application in chronic pharyngitis. He paints the acid undiluted on the pharyngeal mucosa. Its immediate effect is to cause anæmia, and it also has a slightly caustic action. The more acid used, and the more thoroughly it is applied, the greater is its manifest effect, and in this way he regulates its action. At first the patient experiences a feeling of burning, but this readily passes off. The taste is unpleasant, but does not persist for any length of time. On the day the remedy is used, dryness, rawness of the throat, and even hoarseness, may be complained of; but distinct benefit is usually experienced on the second day. According to Weil the acid should be applied twice a week; and this author has found it so effectual that he has almost discarded solutions of iodine, which have hitherto been found by most specialists to be the most efficient means—short of operative interference—of combating chronic pharyngitis.

We have not used pyroligneous acid in a sufficient number of cases to be able to express a definite opinion as to its value, but feel warranted in believing that it is both a safe and an efficient means of treatment. In one case—that of a well-educated and intelligent man—in which chronic rhinitis, pharyngitis and laryngitis of unusual obstinacy coexisted, the patient, not content with applying the remedy to his pharynx as was ordered, applied some to the interior of the nose without any untoward result. The patient stated that he thought that its local application to the pharynx gave him more relief than any of the other numerous remedies he had been given.

5. Tea as a cause of pharyngitis.

Walker Downie (*Pract.*, Oct., 1887) describes a form of pharyngitis sicca met with chiefly among anæmic women, due to excessive indulgence in tea which has been boiled. When used in this way the ordinarily innocent beverage becomes strongly astringent, and thus our author accounts for the development of dry pharyngitis in those addicted to drinking badly infused tea.

6. The treatment of hæmorrhage after tonsillectomy.

Fuller (*Internat. Journ. of Med. Science*, April, 1888) discusses the question of how best to stop bleeding after tonsillectomy in connection with a serious and well nigh fatal case which occurred in his own practice. Almost all known remedies were tried without effect, and eventually the common carotid was tied; but the hæmorrhage continued until the patient fainted, when the flow of blood ceased, and did not afterwards recur. The writer quotes several examples from other authors in which cessation of

bleeding followed syncope. He then discusses the value of ligation of the common carotid, and, in view of the free anastomosis of the various vessels which supply the tonsil, arrives at the conclusion that this line of treatment is not to be recommended. His concluding paragraph we shall reproduce in his own language: "In many of the reported successful cases of tying the artery it is stated that the source of the hæmorrhage was the internal carotid, and probably this is true of all of them. Believing it to be impossible to wound this vessel in excising the tonsil with a tonsillotome, I should, in any future case of excessive hæmorrhage following this operation, depend upon pressure, hæmostatics, and placing the patient in an upright position to encourage fainting; and if the patient were not a bleeder, should expect to arrest the hæmorrhage by these means."

Clarke (*New York Med. Journ.*, 7th July, 1888) describes a case in which dangerous bleeding followed abscission of the tonsil, and did not yield to ordinary remedies, including the cauterization. The treatment eventually adopted consisted in seizing the bleeding stump, dragging it forward, and adjusting a ligature. The first attempt failed, but a second effort was successful.

7. Methodical massage of the pharynx. Ling's method.

Kellgren (*Med. Press and Circ.*, 25th July, 1888) describes a case of post-diphtheritic paralysis in which the palate was also much affected, cured by methodical massage. The method employed for the throat we shall describe in the author's words.

"I gave three distinct exercises for the throat, illustrated by the accompanying drawings.

"(1) I placed two of the fingers of one hand, with the palm upwards, as far back as possible on one side of the root of the tongue. I then made with them a quick shaking movement in an upward and slightly forward direction.

"(2) The root of the tongue was grasped between the thumb and fingers and shaken in a lateral direction.

"(3) The tips of the fingers were placed behind the ascending ramus of the lower jaw, and a vibrating movement made in an inward, forward, and downward direction."

We have given this description at some length because it is not impossible that the same treatment may act favourably in certain other pharyngeal neuroses.

8. Staining of the skin from applications of nitrate of silver to the throat.

Barclay (*Brit. Med. Journ.*, 22nd Oct., 1887) records a case of staining of the skin produced by the continued application of a

solution of nitrate of silver to the pharynx. As this is by no means a solitary instance, and as nitrate of silver is not the only remedy at our command for the treatment of chronic affections of the mucous membrane of the upper part of the respiratory tract, we think the profession generally would do well to be on guard against the indiscriminate and long-continued applications of this remedy.

THE LARYNX.

9. Malignant disease of the larynx.

As our readers are aware, this subject has become a topic of discussion not only among medical men but also in lay circles and the daily press. It therefore seems to us that the more important observations on this matter by trustworthy scientific experts should be discussed at some length.

Semon (*Internat. Centralbl. f. Laryng.*, July, 1888) has instituted a searching collective investigation, with the object of settling once for all the question as to *whether endo-laryngeal operations are likely to produce the conversion of an innocent into a malignant neoplasm*. This authority, from the material now before him, has arrived at the following facts. Records have been furnished by almost all the leading laryngologists of the world of 10,747 cases of innocent growths, and 1,550 malignant neoplasms. Of the former, 8,216 were operated on by the endo-laryngeal method; among them 3,382 papillomata. A transition from an apparently innocent to a malignant tumour was only witnessed in thirty-two instances. It is probable, however, that about half of these may have been malignant from the beginning; indeed, twelve are distinctly classed by the operators as doubtful. This reduces the percentage of such transitions to something under 2 per cent. Even assuming that the treatment had anything to do with the subsequent malignancy, the risk is thus seen to be very small, as small as that of dangerous hemorrhage after tonsillotomy. Even this assumption, however, is manifestly unjustifiable, as Semon has also been furnished with records of twelve cases in which an apparently innocent growth became malignant without any endo-laryngeal operation.

The question *as to the results of operative treatment in cancer of the larynx* has been ably discussed by Scheier (*Deut. med. Wochens.*, 7th June, 1888). This author has collected all the cases he could find described since 1880, 125 in number, and we shall now give his most important conclusions.

In four cases no operative treatment of any kind was adopted; in three of these life lasted twelve months, fourteen months,

and two years, while in one case its duration could not be ascertained.

Tracheotomy was performed in seventeen cases; of these fourteen were dead when the statistics were compiled, while two had lived respectively fourteen days and five months after the operation. Of the fourteen, seven died within eight days of the operation, chiefly of pneumonia or marasmus. The remaining seven lived for periods varying from two to nine months. The seventeenth case is in many respects a peculiar one, and is under the care of Beschorner. After tracheotomy the malignant growth ceased to extend, and the patient was alive four years after the operation.

Laryngotomy, *i.e.* thyrotomy, with a view to the removal of the diseased parts, was performed nine times. Three cases died within fourteen days, in an equal number recurrence took place at intervals varying from three to thirteen months. Three cases thus remain to be accounted for; in two of them information as to subsequent progress is wanting, but in the third no recurrence had taken place thirty-three months after the operation.

Partial excision of the larynx was undertaken in twenty-three cases. Of these, two died within the first fortnight, three died in from three to six weeks after the operation. Recurrence at intervals of from three to sixteen months occurred in five cases. Thirteen cases are thus left, but as in eight of them there was no possibility of following their subsequent history up to sixteen months after the operation, these must be excluded. There thus remain five cases, in which life was prolonged nineteen, eighteen months, two and a quarter, three, and seven years.

Total extirpation was performed in sixty-eight cases. In eighteen death resulted at intervals varying from a few hours to a fortnight. In five death occurred in from three to six weeks. In seventeen recurrence took place; in fifteen of these at intervals of from three to nine months; while in two it was postponed respectively one and two and a half years. Six patients died of intercurrent diseases. Twenty-two cases are thus left, and of these thirteen must be deducted, owing to observations extending over a too short period. Only nine thus remain, and in these it was definitely determined that no recurrence had taken place at periods varying from sixteen months to three and a half years.

Operations through the mouth had been attempted four times. The most noteworthy result was obtained by B. Fraenkel (*Gottstein. Die Krankheiten des Kehlkopfes*, 2te. Auflage, 1888). As this case is only touched upon by Scheier, and as it is one of great importance, we shall give a few further details. The patient was

a man, aged 70, and in 1881 a tumour was removed from the right vocal cord by means of a snare. Microscopic examination showed it to be carcinomatous. Up to June, 1883 the neoplasm had recurred five times, and on each occasion endo-laryngeal removal was resorted to. At the age of 75 the patient seems to have spent about two years without any recurrence, while his voice was good. It is also noteworthy that in this case a cancerous gland was removed from the neck between 1881 and 1884.

Solis-Cohen (*Med. News*, 3rd Dec., 1887) describes a case in which twenty years ago he operated for malignant disease of the larynx. The greater part of the left cord, and corresponding ventricular band, were excised, and corrosive sublimate (3½ per cent. sol.) was applied. Microscopic examination confirmed the diagnosis. The voice had become good, owing to compensatory movement of the opposite cord.

We have thus presented to our readers the most striking publications of the past year concerning the prognosis and treatment of malignant disease of the larynx. The general conclusion we must arrive at seems to be that endo-laryngeal operations have little or no tendency to cause a benign growth to take on malignant action; and, further, that the question as to the best method of treating laryngeal cancer is still *sub judice*:

10. Laryngeal phthisis.

osenberg (*Théráp. Monatshefte*, 7, 8; 1888) discusses the treatment of this disease in an elaborate paper, most of which is taken up with a *resumé* of various methods. It contains, however, also original observations on the value of the menthol treatment which the author introduced some years since. As our readers are aware, the two remedies for which the best results in the treatment of phthisical ulcerations are claimed are lactic acid and menthol. Rosenberg was enabled in a case of pharyngeal tuberculosis to test the relative merits of the two substances by treating one side with menthol and the other with lactic acid. The latter was eventually given up, both on account of the pain it produced and because it seemed to be less efficacious as a healing agent. Of special interest are the following short notices of cases, treated some years ago:

"(1) M. had, in addition to infiltration of both apices, a tubercular ulcer on the posterior wall of the larynx, which healed in March, 1886. The scar can be seen to-day.

"(2) J. had catarrh of the left apex, an ulcer over the left vocal process and posterior wall. Cured since May, 1886.

"(3) S., catarrh of both apices, ulcer of the posterior wall. Cured since May, 1886.

"(4) R., in addition to pulmonary phthisis, an ulcer on the left vocal process. Cured since May, 1886.

"(5) T., pulmonary phthisis, ulcer of vocal cord. Cured since June, 1886.

"(6) S., infiltration of the left apex, ulcer on the left cord. Cured a year ago.

"(7) P., catarrh of both apices, ulcers on both vocal cords. Cured a year ago.

"(8) Ch., catarrh of both apices, ulcers on both vocal cords and posterior wall. Cured a year ago."

Beehag (*Edinb. Med. Jour.*, Jan., 1888) confirms Rosenberg's observations. [As this paper was written while the author was my clinical assistant, I feel obliged to mention that, although I have seen great benefit from menthol, I have, to the best of my recollection, observed cicatrization only once; and in that instance recurrence has already, after an interval of a few months, taken place.—P. McB.]

We have not referred to the method which Rosenberg employs in using menthol, as the matter was fully discussed in the "Year-Book," 1888. We may further mention that, as Beehag points out, menthol is a useful application in most forms of painful angina. This is only what one might reasonably expect from a drug which combines strong antiseptic with powerful anæsthetic properties, without having any very marked irritant action.

Hitherto the impression has prevailed, rightly or wrongly, that high altitudes are unsuited for cases of laryngeal phthisis. Clinton Wagner (*New York Med. Rec.*, 29th October, 1887), in a paper on Colorado and Davos as winter health resorts, states his belief that even cases of laryngeal phthisis may be allowed to remain at high altitudes, provided only the pulmonary condition be improving.

11. Forcible syringing of the larynx.

Loewe (*Monats. f. Ohrenheilk.*, May, 1888) uses an altogether novel, and certainly heroic, method of treating cases in which inspissated secretion in the larynx forms a troublesome symptom. To remove this he employs a very strong current of fluid directed into the larynx in a stream under considerable pressure. The injection is used tepid, and the patient is made to phonate before the liquid is turned on. So far we have no record of other observers having used this method, so that no definite opinion can be expressed upon its merits or demerits.

12. The treatment of laryngeal stenosis.

In connection with a rare case of laryngeal stenosis, which

resulted from the cicatrisation of tubercular ulcers, Lemcke (*Berl. klin. Wochens.*, 26th March, 1888) discusses the relative merits of internal dilatation and thyrotomy in the treatment of such cases. He arrives at the conclusion that "dilatation by laryngoscopic methods is useful in mild cases, i.e. where the stenosis is due to yielding tissue which only partially occludes the larynx; but that in extensive cylindrical strictures affecting the whole larynx, and especially when the margins are not smooth, laryngotomy is the only operation from which a result is possible."

NASO-PHARYNX AND NOSE.

13. Nasal saw worked by electricity.

Roe (*New York Med. Journ.*, 4th Feb., 1888) describes a most ingenious nasal saw worked by electricity, the action of which is, therefore, much more rapid and less painful than when the hand is used.

14. Continued interference with articulation after the removal of adenoid vegetations.

Cartaz (*Arch. de Laryng.*, Dec., 1887) attributes the occasional, although rare, persistence of vocal disturbance after adenoid vegetations have been removed, to paresis of the soft palate resulting from long-continued inaction. He recommends the use of electricity and methodical vocal exercises.

15. Epistaxis.

Hénocque (*La semaine Méd.*, 11th Jan., 1888) suggests the use of a 20 per cent. solution of antipyrin as a local application in obstinate nasal hæmorrhage; while Ernyei (*Pest. Med. Chir. Presse*, No. 14, 1888) recommends plugging the nostrils with tampons saturated with turpentine. The only drawback to the remedy is, according to this author, its irritating action on the mucosa.

16. Ozæna.

Ruault (*Arch. de Laryng.*, Dec., 1887) advises the following nasal spray in cases of ozæna:

Naphthol ..	..	..	..	12
Alcohol at 90°	..	..	..	84

A teaspoonful of this fluid is used in a litre of water.

Bryson Delavan (*New York Med. Journ.*, 22nd Oct., 1887) recommends treatment by electricity. One electrode, composed of copper wire enveloped in absorbent cotton wool saturated with tepid water, is applied within the nose and connected with the *negative pole*. The other consists of a sponge, and is applied to

the back of the neck. A current of from 4 to 7 milliamperes is employed.

17. The removal of nasal polypi.

McBride (*Edinb. Med. Journ.*, Aug., 1888) considers that for the ordinary pedunculated mucous polypus the cold wire snare is preferable both to the forceps and galvano-caustic snare. In such cases the growth should be pulled out whenever it is firmly grasped, and this proceeding will be found both less painful and more efficient than if abscission by a heated wire be used. In sessile growths he prefers the electric cautery. After the growths have been removed the pedicles must be cauterised either with the electric cautery or chromic acid. If circumstances do not admit of this, the continued use of an alcohol spray (as first suggested by Miller) tends to prevent recurrence. In post-nasal polypi with thin pedicles the author also favours the cold snare.

18. The connection between the nose and Basedow's disease.

B. Fraenkel (*Berl. klin. Wochens.*, 6th Feb., 1888), before a medical society in Berlin, demonstrated a case of extreme interest. He stated that since Hack in 1886 described a case in which exophthalmic goitre was cured by treatment of the nose, his attention had been constantly directed to this subject, but so far his results had gone to show that only in quite exceptional instances was there a connection between the nose and the disease.

The patient shown was seventeen years of age, and came to Fraenkel during the end of last year. There was a goitre, over which bruits could be heard, increased vascularity, and a pulse of 120 per minute, but there was no exophthalmos. The case was first treated with the constant current, and during this period the patient complained of nasal stenosis, and the electric cautery was applied first to the left inferior turbinated body. A few days after this the goitre diminished considerably on the left side, and the pulse became slower. Fraenkel then for three weeks continued galvanisation of the sympathetic on the right side with no result. A few days before the case was demonstrated the cautery had been applied to the right nostril, and a diminution of $\frac{1}{2}$ c.m. in circumference had already followed. The pulse, too, had become normal.

19. Hay fever and allied conditions.

A considerable amount of literature has appeared bearing directly or indirectly upon these subjects. Ringer and Murrell (*Brit. Med. Journ.*, 16th and 23rd June, 1888) very properly point out that pollen is by no means the only irritant capable of producing the symptoms of so-called hay fever. Among the more

interesting of their cases are those in which the emanations from horses and a caterpillar respectively brought on a paroxysm. In another, sneezing only followed partaking of food. For treatment these authors rely upon cocaine, pungent inhalations, tobacco, asthmatic remedies, hazeline, arsenic, the iodides, and operations on the nose, where abnormalities exist.

McBride (*Brit. Med. Journ.*, 15th September, 1888) describes a case analogous to hay fever which was temporarily cured of its most troublesome symptom—viz. asthma—by the use of the electric cautery. In this patient a paroxysm was commonly induced by hoar frost. As a local application he considers menthol as often superior to cocaine, because, although a less powerful anæsthetic, it does not seem to lose its effect after continued use. The same author believes that, according to circumstances, hay fever should be treated by general nerve tonics or by destroying the sensitive areas within the nose by caustics, while in addition to menthol he mentions the usual palliatives. Further, he considers that in no given case of hay fever can a cure be guaranteed, whatever method of treatment be employed.

Lermoyez (*Annal. des Mal. de l'Oreille, etc.*, March, 1888) takes his views chiefly from a work by Leflaive, to which, even in abstract form of any length, we have no access. According to these authors, hay fever is due to a gouty or arthritic diathesis, and the paroxysms are provoked not by pollen but by sunlight. Lermoyez is strongly of opinion that treatment directed to the nose, whether abnormal or not, does not effect a cure. This view, be it observed, is directly opposed by the actual results recorded by Roe, Daly, and others. (See "Year-Book," 1888.)

Kinnear (*New York Med. Rec.*, 14th July, 1888) attempts to show that the paroxysms known as hay fever are due immediately to hyperæmia of endo-cranial parts, especially "the central cells of the fifth nerve." To regulate this he makes use of Chapman's ice-bags as follows:

- (1) In persons with feeble circulation and cold extremities the bag is applied to the region between the fourth cervical and second or third lumbar vertebræ.

- (2) If there be no evidence of general arterial contraction, a ten-inch bag is used over "the cilio-spinal region."

His recorded results seem to indicate that this method of treatment has a more or less palliative effect.

Genth (*Brit. Med. Journ.*, 16th June, 1888) believes that most cases of hay fever begin with conjunctivitis, and advises the instillation of a 1 in 3,000 solution of corrosive sublimate into the eye. This author also seems to hint darkly at a hay fever

germ, but does not go further than to state that it is not pollen. He, however, vividly describes how this unknown something multiplies and extends to the respiratory tract unless checked in its onward progress by timely treatment directed to the eyes!

Considering all these conflicting views we must necessarily arrive at the conclusion that hay fever often resists all treatment.

The main indications seem to be to

- (1) Strengthen the nervous system.
- (2) Diminish hyperæsthesia of the nasal mucosa either by the application of anæsthetics or the destruction of sensitive areas.
- (3) If these means fail, to remove the patient as far as possible from the exciting cause.

SUMMARY OF THE THERAPEUTICS OF
THE YEAR 1887-88,
CHIEFLY IN REFERENCE TO NEW REMEDIES.

BY WALTER G. SMITH, M.D., UNIV. DUBLIN,

*King's Professor of Materia Medica in the School of Physic, Trinity College, Dublin ;
Physician to Sir Patrick Dun's Hospital.*

ORGANIC chemistry continues to lead the van in the suggestion of new remedies. Indeed, the crowd of claimants pressing for therapeutic favour seems ever on the increase, and so numerous are they within a single year, that it is difficult to make a selection of those which are likely to survive the ordeal of extended criticism. Many have but an ephemeral career and are quickly discarded, on account of some unfavourable action, or for other sufficient reason. Others of good promise are still upon their trial, and the time that has elapsed since their introduction is scarcely long enough to enable a sound judgment to be formed as to their real merits. Yet, upon the whole, practical therapeutics has undoubtedly been the gainer, and year by year we become possessed of better and more varied means of subduing or relieving morbid conditions.

Speaking generally, it may be said that much attention has been paid during the past year to antipyretics, antiseptics, and to remedies of a hypnotic and anodyne character. This will appear in the following abstracts :—

1. Antifebrin (acetanilide).

An excellent summary of recent literature in reference to antifebrin is given in the *Med. Chron.*, July, 1888, and to it we are indebted for the following :—

Since Cahn and Hepp published the first account of this drug in 1886, more than one hundred papers have appeared in various languages concerning it, and many additional facts have been recorded with regard to its physiological action and uses. In using

antifebrin, it is important to remember that it is not really soluble in cold water, requiring 189 times its own weight for solution; but it dissolves easily in pure ether and alcohol, and is fairly soluble in liquids containing alcohol, as wine. The drug can be readily administered in the form of powder, or in cachets. There is some diversity of opinion as to the range of dosage; but, according to the majority of observers, 4 to 7 grains are a suitable dose in febrile cases, which may be repeated two or three times; but, as a rule, 30 grains a day is a sufficient quantity. Much, however, depends upon the ailment. Phthisical, weakly, and anæmic patients seem easily affected by antifebrin, and to require small doses. Large quantities are apt to cause cyanosis, cardiac weakness, and collapse.

In typhoid fever, 4 grains every six or eight hours are often sufficient. In rheumatic fever and pneumonia, larger doses are usually required. For the relief of pain in neuralgia, etc., from 8 to 15 grains may be given for a dose; and even in doses of 2 grains it efficiently reduces temperature. Children seem to bear antifebrin well; and Widowicz, who has had extensive experience of its employment in the febrile diseases of children, says that $1\frac{1}{2}$ grains may be given to those aged three or four years, while doses of 3 or $4\frac{1}{2}$, or even $7\frac{1}{2}$ grains, may be administered to older children. It is worthy of remark that antifebrin scarcely ever causes a cutaneous rash, like other antipyretics. Sometimes the profuse sweating is accompanied by sudamina and redness of the skin. Although comparatively insoluble, antifebrin is readily absorbed, for its effects on temperature are usually noticeable within an hour, and sometimes appear in a quarter of an hour. The duration of the reduction of temperature is usually from three to six hours; but, of course, much depends upon the dose and the ailment. When the temperature rises again chilliness is sometimes noted, but rarely rigors. Almost all observers agree that shivering is less common after antifebrin than after kairin, thallin, and antipyrin. The exact cause of the temperature fall has not been satisfactorily determined; but it is probably due both to increased dissipation of heat and also to diminished heat production.

Although introduced at first only as an antipyretic remedy, antifebrin has since been strongly recommended, especially by French observers, as a sedative to the nervous system—*e.g.* in locomotor ataxy, sciatica, lumbago, and other nervous ailments.

As a hypnotic it has been highly spoken of by many observers in affections of the nervous system, as well as in febrile conditions. Kell records a case of acute alcoholism, with rapid pulse and high

temperature, in which sleep followed two doses of 10 grains, and became profound after a third dose. The patient woke after a five hours' sleep, much better.

2. Antipyrin.

This drug maintains its reputation, and continues to be largely used. As an anodyne, **M. Germain Sée** was the first to call attention to the very marked influence of antipyrin over pain, whether administered by the mouth or hypodermically. Since he published his series of cases the drug has been employed tentatively in most civilised countries, and the reports are now coming in. With very few exceptions the experiments have been successful. **Fränkel**, of Berlin, in order to test its anodyne properties, substituted antipyrin for morphine injections in all the cases under his care. In not a single case did he fail to give relief. He employed it in 5-grain doses, repeating the injection in an adjacent spot if necessary. He proved that the local action of 5 grains of antipyrin was about the equivalent of a thirtieth of a grain of morphine. The influence of the drug was manifested in about fifteen seconds, and lasted from six to eight hours. He expresses the conviction that antipyrin may be used with advantage in many cases in which morphine is at present employed. It produces no disagreeable after-results apart from the slight pain of the injection itself. **Hirsch**, of Hanover, is not less affirmative after a trial of the drug in seven cases of severe rheumatic and neuralgic pain. In the United States, **Dr. Waugh**, of Philadelphia, has employed it successfully in a series of cases of neuralgia, muscular rheumatism, sciatica, etc. In the treatment of sciatica the relief was more prompt and at least as marked as could have been obtained from the use of morphine. He used it in doses of from 2 to 5 grains. **Dr. Arca**, Professor of Medicine at Buenos Ayres, himself a sufferer from chronic rheumatism, was treated by **M. Sée** by means of a hypodermic injection of 15 grains of antipyrin, together with from 30 to 60 grains by the mouth, daily. The result was marked relief, though the pain returned directly he discontinued the treatment. There seems no reason to doubt that in antipyrin we possess a powerful anodyne for pain of nervous or rheumatic origin. Dispensed in the form of tablets, it is easily dosed, and may be administered either hypodermically or by the mouth. Beyond the smarting which follows the injection, no after-effects of moment are produced, and it has rarely been known to give rise to inconvenient, much less toxic, symptoms. (*Brit. Med. Journ.*, Jan. 7th, 1888.)

Dr. J. Ogilvey renews his recommendation of antipyrin in *migraine*. He finds that some cases require larger doses than the

8 grains (hourly repeated) which he first advised, and that double that quantity will then be effectual. For such as are unable to leave home or enjoy travel, to go into crowded rooms, or to venture on certain articles of food and drink, or even medicinal tonics, there is in antipyrin a promise of immunity from the dreaded headache. (*Brit. Med. Journ.*, Jan. 14th.)

Some interesting and practical "Notes on Antipyrin" are contributed by Dr. W. T. Brooks to *Brit. Med. Journ.*, May 19th.

Dr. Kingsbury adds his testimony, based upon the results of treating twenty cases of migraine. Several of the patients having suffered for over ten years, and finding all drugs useless, had become reconciled to being periodically prostrated for one or two days. In every case he ordered 8 grains of antipyrin, dissolved in water or lemonade, to be repeated each half-hour until cured, the patient to remain lying down. Most of the cases were quite cured by two powders, but the most obstinate yielded to three, and in no case did the antipyrin fail. A cup of warm tea sometimes seemed to help, and the only inconvenience due to the treatment was, in a few of the cases, considerable sweating.

Many of the patients can hardly credit that, instead of being utterly helpless for twenty-four hours, they can now cut short an attack in one hour.

There is another great advantage in using antipyrin, and that is that it prevents as well as cures these attacks. One lady, who cannot remember having fewer attacks than three a month, each lasting about thirty-six hours, has been quite free for eight weeks, and this she attributes solely to the occasional use of an antipyrin powder. (*Brit. Med. Journ.*, Dec. 24th, 1887.)

I can confirm these statements, and consider antipyrin to be a most valuable remedy in neuralgic affections.

M. Chouppe has called attention to the good effects of antipyrin in uterine pains after parturition, or in dysmenorrhœa. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of an irritable temperament. It does not interfere with the oxytocic action of ergot. (*Brit. Med. Journ.*, Dec. 17th, 1887.)

Dr. Laget employed antipyrin with complete success in relieving severe labour-pains, continuing for upwards of two days, and which had resisted opiate enemata. The drug was administered by enema (2 grammes in 100 grammes of water), repeated in an hour. (*Brit. Med. Journ.*, Jan. 28th, 1888.)

Antipyrin is frequently effective in preventing sea-sickness.

Hence it appears, as pointed out by Dr. Neudörfer, that the named "antipyrin" does not represent the whole value of the drug

and that its anodyne and antiseptic properties are of equal, if not greater, importance. The author has often observed that the hemicrania of women disappeared for a long time after a single subcutaneous injection of antipyrin. The drug was decidedly preferable to morphine, and was in many respects quite equal to cocaine. It prevents putrefaction, and kills bacteria, and may be used for surgical purposes in a five per cent. solution. (*Brit. Med. Journ.*, Jan. 21.)

3. Unpleasant effects from antipyrin.

Prescribers who have made much use of antipyrin as an analgesic have been for some time aware that it was liable now and then to give rise to symptoms of an extremely disagreeable kind. Dr. Allen Sturge records an interesting example of idiosyncrasy, which deserves to be borne in mind. A member of his family liable to migraine was attacked in the ordinary way a few days ago, and he administered for the first time a dose of 5 grains of antipyrin in powder, with the following curious result:—Five minutes after taking it, the "deadly sickness" which was previously present seemed to give way, and an "expanding sensation" was felt, rising from the stomach upwards. Almost immediately she sneezed violently for about twenty times running without pause. The face and eyes became deeply suffused; tears began to flow; quantities of mucus flowed from the nose; the breathing became hard and laboured, accompanied by a feeling of suffocation; there was complete inability to lie down. A violent cough shortly came on, and large quantities of mucus were expectorated; at the same time there was very profuse sweating.

After these phenomena had lasted for about half an hour, intense itching was felt on the insides of both thighs, and on examination there was found a thick out-crop of urticaria, which soon extended on to the abdomen. There was also a strong coppery taste in the mouth—not continuing, but coming on in violent bouts—and an equally strong smell of the same metallic nature, also intermittent. There was loud singing in the ears, which felt intensely congested. The pulse was quick and very full.

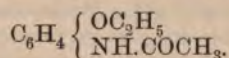
After the symptoms had lasted about three-quarters of an hour from the commencement they gradually disappeared, some tightness of the chest and running at the nose remaining for four or five hours longer. The sickness accompanying the migraine disappeared completely as soon as the drug had begun to work; the headache also disappeared for a time, but came back slightly about four hours afterwards. (*Brit. Med. Journ.*, Feb. 4, 1888.)

Two cases comparable to the above were recently mentioned in the *New York Med. Rec*. In one case related by Dr. C. T.

Barber, of Brooklyn, a man took 15 grains immediately before going to bed. He was no sooner in bed than intense itching, starting from the face and extending over the whole body, began to annoy him; the whole body was soon covered by an erythematous blush, which quickly resolved itself into characteristic urticaria. The case was so markedly swollen that the patient's features were entirely obliterated. The urgent symptoms quickly disappeared after the administration of an emetic, and after mild purgation the patient was again restored to his usual health. In the other case **Dr. Whitehouse**, of Santiago, gave $7\frac{1}{2}$ grains to a child. In two minutes there was intense pain in the stomach, followed by general urticaria, and finally by loss of consciousness. One-seventieth of a grain of atropine was administered, and in a few minutes the child was well.

4. Phenacetin.

This is a body analogous in its constitution to antifebrin. Its technical name is para-acetphenetidin, and its formula—



It is a nearly white, inodorous, crystalline powder, and perfectly tasteless; soluble with difficulty in water, a little more soluble in glycerine, but more freely in alcohol; insoluble in acids (except glacial acetic acid) or alkaline liquids. It was introduced by **Drs. Kast and Hinsberg**, in 1887, and seems to be a reliable antipyretic. **Dr. Kohler** (*Wien. med. Woch.*, 1887) and **Dr. Hoppe** have reported favourably upon it; and **Dr. Osborne Grenfell** (*Practitioner*, May, 1888) shows that it is an efficient antipyretic, and that in cases of pyrexia the action of the drug begins within half an hour after administration. The patient generally perspires freely, and feels drowsy, but comfortable. The drug has been extensively used in the Wandsworth and Clapham Infirmary, not only as an antipyretic, but also as an analgesic in neuralgia, and with good results. The most satisfactory dose for an adult is about 8 grains, and children bear it well. In one case the urine became discoloured, but no untoward effects were observed.

Dr. Leyland Roe also found phenacetin to act admirably as an antipyretic in from 4 to 12-grain doses. It exerts a greater and more prolonged effect upon the temperature than antipyrin, and causes neither rigors, vomiting, nor nausea, but rather a sense of well-being, the patient frequently becoming cheerful and desirous of food. (*Brit. Med. Journ.*, May 26.)

Dr. Macnaughton Jones specially recommends phenacetin in the

evening pyrexial rise of phthisical cases, and states that it does not produce any collateral unpleasant effects.

5. Amylene hydrate.

A new hypnotic, which appears to possess certain advantages, has been recently introduced by **Professor Von Mering**. In its physiological effects it seems to occupy an intermediate position between chloral and paraldehyde. Although sold under the name of amylene hydrate, it is an isomer of amylic alcohol ($C_5H_{12}O$), and its constitution appears to be that of tertiary amylic alcohol, $\left. \begin{matrix} (CH_3)_{2/2} \\ C_2H_5 \end{matrix} \right\} C.OH$, i.e. dimethyl-ethyl-carbinol. It is a clear, colourless, slightly oily liquid: sp. gr. 0.81; boiling point $102.5^\circ C$. It has an odour resembling paraldehyde, with a faint suggestion of camphor; it is warm in the mouth, and has a hot aromatic taste, with a slight pungent after-taste. It is only slightly soluble in water (1 in 8), though freely in alcohol, and may be given with extract of liquorice (Von Mering), or in mixture with red wine and sugar (**Scharschmidt**).

Von Mering gave the drug to sixty patients in doses varying from 46 to 77 grains; he observed no unpleasant after-effects, no nausea, headache, or digestive disturbance. **Scharschmidt** found that so large a dose was not necessary, although he corroborates Von Mering's statement that even then there was no appreciable disturbance of the respiration or pulse-rate. In 80 per cent. of the cases sound sleep of from five to seven hours' duration was procured by doses which did not exceed 45 grains, and were in some instances as low as 20 grains; by repeating the dose, or giving a larger one, sleep was, in all the cases where failure was at first noted, subsequently obtained. In twenty-four of **Scharschmidt's** cases there was much excitement, and by producing sleep under such conditions as mania, delirium tremens, and epilepsy or hysteria with delirium, amylene hydrate appears to have proved itself superior to urethan. (*Brit. Med. Journ.*, Jan. 14, 1888.)

Dr. G. Avilles has made a number of experiments with amylene hydrate in the clinic of **Professor Riegel** at Giessen. The drug was tried in various internal diseases, and, in all cases of disordered circulation, it is preferable to chloral, since the latter considerably diminishes the pressure in the vascular system. As a hypnotic it is less powerful than chloral, and more powerful than paraldehyde. After small doses, sleep lasts from two to three hours; after large doses (2.0 to 3.2 grammes) from six to eight hours. Respiration was not affected, and there was no change in pulse or blood-pressure, except retardation of pulse. There was no bad taste in the mouth, nor disagreeable smell of the breath, on

awakening, such as after paraldehyde. It may be administered by enema, *e.g.*—

R. Amylene hydrate, 3 grammes; aq. destill.; gum Arab. āā 25 grammes. M.

(*Brit. Med. Journ.*, Mar. 10.)

Dr. F. Girtler has also tried the drug in sixty-one cases of various diseases, and he prefers it to chloral, as it has no injurious effect on the heart. Average dose for adults, 3·5 grammes (52 grains); sometimes smaller doses were sufficient, but at certain times larger doses, such as 6 grammes, had to be resorted to. In a few cases headache and slight oppression were complained of; but there was no vomiting. (*Berl. klin. Woch.*, 6, 1888.)

Dr. Buschau thinks amylen hydrate a useful addition to our stock of hypnotics. He tried it in a number of cases in a lunatic asylum, and his net results were: satisfactory sleep in nearly 80 per cent. of the cases, tolerably good sleep in 12 per cent., failure to induce sleep in 8 per cent.

Amylene hydrate is expensive at present, nearly 30s. a pound.

Dr. Laves reports that, more frequently than any other hypnotic, it induces deep and refreshing sleep. Unpleasant consequences (excitement, etc.) were very rarely observed, dangerous results never. (*Berl. klin. Wochensch.*, May 21, 1888.)

Some other tertiary alcohols, viz. trimethyl-carbinol and dimethyl-carbinol, have been investigated by Russian observers, but do not seem as yet to have attracted much attention in this country. (*Prov. Med. Journ.*, Jan. 2.)

6. Sulphonal.

Under this empirical name, suggested by Bayer and Co., is introduced a new hypnotic discovered by Professor Baumann. It is an oxidation product of the union of ethyl-mercaptan with acetone, rejoices in the appalling name of "diethyl-sulphon-dimethyl-methane," and its formula is $(\text{CH}_3)_2 - \text{C} - (\text{C}_2\text{H}_5\text{SO}_2)_2$.

It is a very stable compound, crystallises in large colourless tables, and is perfectly devoid of taste and smell. It dissolves in 18 or 20 parts of boiling water, in 100 parts of water at the ordinary temperature, and is easily soluble in alcohol or ether. It is not affected by acids or alkalis.

Prof. Kast, of Freiburg, has tested it therapeutically, and has nothing but praise for this new addition to the *materia medica*. Twenty experiments with sulphonal on healthy men showed that doses of 3 or 4 grammes were borne by adults without the least discomfort or disagreeable after-effect. Employed medically, the

drug has been given to sixty patients, and 300 observations of its effects were made (Prof. Cramer gave it 200 times in the Marburg Lunatic Asylum). The results, almost without exception, were that the patients sank within from half an hour to two hours into a tranquil and sound sleep, lasting from five to eight hours, and awoke feeling perfectly comfortable. A few felt tired and sleepy next day. The digestion, pulse, and temperature were unaffected, and it is curious that no ataxy of any degree or kind was present, whereas this was the most prominent symptom in dogs after large doses. The ordinary dose for man is 2 grammes ($\frac{1}{2}$ a drachm). Sulphonal appeared most efficacious in cases of sleeplessness in nervous subjects, but was given with benefit in all kinds of cases, including even cardiac valvular disease. (*Brit. Med. Journ.*, April 21, from *Berl. klin. Wochensch.*) Dr. Rabbas confirms Kast's conclusions, and considers sulphonal in doses of from 2 to 3 grammes to be a better and safer hypnotic than amylene hydrate and paraldehyde in larger doses. It does not act so quickly as chloral, but its effects are more enduring. Sleep is induced usually within half an hour. It has no injurious action upon the heart, respiration, appetite, or digestion. (*Berl. klin. Woch.*, April 23.)

Drs. Rosin and Oestreicher also conclude that, in moderate doses, i.e. 2 grammes, this drug is a non-injurious hypnotic. It is best given in capsules or tabloids. (*Brit. Med. Journ.*, July 7, from *Berl. klin. Wochensch.*)

Dr. Lovegrove, on the contrary, found its effects upon patients very discouraging. For several hours after taking the drug no appreciable effect could be observed, but during the greater part of the following day there was extreme drowsiness and considerable cyanosis. The dose given is not mentioned. At present price (May, 1888), 16s. per ounce, it is scarcely likely to supplant its older rivals, morphine and chloral. (*Brit. Med. Journ.*, May 26.)

7. Salufer.

Mr. W. Thomson has discovered that alkaline fluorides are powerful antiseptics; and has proposed, as the one best suited for general use, the neutral sodium silico-fluoride (salufer). It is a white inodorous compound, sparingly soluble in water, about $2\frac{1}{2}$ grains per ounce. Mr. Mayo Robson has used salufer extensively in his surgical practice, and is well satisfied with it. A solution of 1 grain to an ounce of water is strong enough for ordinary purposes; and, being unirritating, it is especially suitable for syringing out cavities. He believes that it will prove of great use to obstetricians, and it is a most efficient deodoriser. The solution acts on the glaze of porcelain after long use, and corrodes steel instruments; but sponges are unaffected by it. (*Brit. Med.*

Journ., May 19.) Drs. Hayward and W. J. Sinclair speak highly of it in obstetric and gynecological practice, and Mr. Penfold in dental practice.

8. Methyalal.

This is a new hypnotic which may possibly render good service in therapeutics. Several observers have studied its action, viz. MM. Personali, Mairet, and Combemale. It is rapidly eliminated, and leaves no ill effects after awakening. It possesses a sweet taste and ethereal odour, and being soluble in water is easily administered. In cases of mental disturbance it appears to be worthy of further trial, judging from the results obtained by MM. Mairet and Combemale.

The dose is from 3 to 5 grammes and upwards. (*Brit. Med. Journ.*, Oct. 22.)

9. Cardiac tonics.

Digitalis still holds its place as the most powerful heart tonic which we at present possess, and the most permanent in its effects. But, as we all know, there are good reasons for the zealous efforts made of late years to find some other means of strengthening the heart's action safely as well as certainly in cases of failure of compensation.

Although *strophanthus* has now been on its trial for over two years, it is difficult to decide in exactly what cases of cardiac disease it is preferable to digitalis. Nearly all observers confirm Fraser's original statements without adding any important new facts. However, Guttman maintains that it cannot compare, either as a heart drug or as a diuretic, with digitalis. According to observations in Professor Bamberger's clinic, *strophanthus* was used with success in (1) every kind of disease of the cardiac muscle, in which its effect exceeded that of all other remedies; (2) valvular failures, in which the cardiac muscle could not do the necessary work, either owing to commencing degeneration or to slight hypertrophy; (3) those cases of renal diseases in which the action of the heart was impaired or normal, but where there was in any case an increase of the cardiac activity, and thus indirectly increased diuresis. Success was not to be expected in: (1) too advanced degeneration of the cardiac muscles; (2) valvular failures with great hypertrophy, where the greatest possible quantity of work was already done and an increase of the cardiac energy was no longer possible; and (3) in renal diseases with cardiac hypertrophy. Though the indications for the use of *strophanthus* were in general exactly the same as those of digitalis, the new remedy had, nevertheless, the advantage that its effect was produced in from ten to fifteen minutes, and that it

had no cumulative effect, and could thus be given for a long period of time. The tincture recommended by Fraser (1:20) or the strophanthin itself was used. After the administration of the first dose, nausea and increased action of the bowels were observed in susceptible persons. Strophanthin could be given by the mouth without any disagreeable after-effects. *Sparteine* does not appear to have attracted much attention. (*Brit. Med. Journ.*, Dec. 31, 1887; Jan. 21, 1888; Feb. 11, 18.)

10. Salol was noticed in the last two "Year-Books," and has been further investigated. It has been advocated in rheumatic fever especially, but a survey of the results recorded in recent literature fails to bring out any important advantage which it possesses over the more manageable salicylate of sodium. Moreover, the latter drug sometimes succeeds where salol has proved inefficacious.

11. Saccharin has come into more general use, and will probably hold its place. It sometimes causes nausea and unpleasant and persistent sweet taste in the mouth, so much so that patients are obliged to discontinue it, as in a case reported by Dr. Hedley. (*Brit. Med. Journ.*, Feb. 11.)

Dr. James Little recommends saccharin as useful in preventing ammoniacal change in urine in cases of cystitis. (*Dublin Journ. Med. Science*, June.)

12. Salicylate of sodium.

In the same number of the *Dublin Journal*, Dr. James Little publishes a valuable note upon the value of a combination of sodium salicylate and effervescing citrate of caffeine in migrainous headache. He usually directs the patient, should he awake with any feeling of headache, to take 20 grains of the salicylate in a wineglassful of water, made effervescent by the addition of a dessert-spoonful of the granular citrate of caffeine, and, if necessary, to take a second, or even a third, dose at intervals of two hours. It does not lose its effect.

13. Iodoform.

In the early part of the year 1887 Heyn and Roosing, of Copenhagen, published a paper stating as the result of their experiments that iodoform not only had no antiseptic (antibacterial) action, but often actually transmitted, or was capable of transmitting, organisms to wounds. They tested this, solely in the laboratory, by observing the effect on growing germs of various percentages of iodoform. The organisms used were a micrococcus, a staphylococcus, a pneumococcus, and bacillus subtilis, all of which grew readily in a 4 per cent. solution of iodoform in olive oil, mixed with the serum, gelatin, or other cultivating medium. It was

noticed that sometimes a staphylococcus would form in a pure cultivation of bacillus subtilis, from which it was concluded that the iodoform was the means of infection. These observations excited great attention on account of the extended use of iodoform and of its repute as an antiseptic.

Professor König, in commenting on the results of these observers, remarked that they cannot be considered final since they omit all reference to the action of the substance in morbid conditions in man. Iodoform is admitted to be only a weak antiseptic (antibacterial) agent, and its beneficent action in surgical conditions is due to the fact that if placed on a fresh wound it hinders secretion from the raw surface, thus preventing the formation of a very fertile soil for organisms. If, for example, it is spread on a tubercular raw surface, it is illogical to expect much benefit from its application, since it does not prevent the growth of the tubercle bacillus; but if the tubercular deposit be scraped away and iodoform then applied, its secretion-stopping powers will come into action—where there is no fertile soil there are no bacteria. Bruns, however, considers that iodoform possesses a local anti-tubercular action, as shown by the fact that if two abscesses containing tubercle bacilli be opened at the same time, one plugged with iodoform and the other dressed simply, the first will be found after some weeks to contain no bacilli, while the second is still full of them.

Heyn and Roosing's results have been confirmed by other observers, who have extended the experiments to other forms of bacteria. There seems no doubt of the facts; the interpretation, as Binz remarks, is, however, doubtful. Binz, in an instructive article, goes on to state that iodoform acts by setting free iodine, and this action only takes place under the action of light and of living tissues. The combination of the liberated iodine with the gelatin and other proteids present in their cultivating media seems to have been lost sight of by the Copenhagen observers in drawing their conclusions. An important use of iodoform is in cases of tubercular meningitis in children. Holt found that unguentum iodoformi (10 per cent.) rubbed into the scalp was followed by recovery in three out of five cases. (!) (*Brit. Med. Journ.*)

14. Guaiacol.

Creasote is a composite substance containing various constituents, of which guaiacol, $C_6H_4 \begin{cases} OH \\ OCH_3 \end{cases}$, is the most important, 60 to 90 per cent. of beech-wood creasote consisting of this ether. Guaiacol is a colourless liquid, with an aromatic smell, slightly soluble in water, readily so in alcohol and fixed oils.

The statements made by **Sommerbrodt** and **Fraenkel** as to the benefits derived from the administration of creasote in phthisis, led **Sahli** to try guaiacol, which has advantages over creasote in that it is of definite composition, and has a less unpleasant taste and odour. **Sahli** prescribed it thus :—

R. Guaiacol puriss.	....	....	....	....	15 to 30 minims.
Aq. destill.	....	....	....	....	6 ounces.
Sp. vini rect.	....	....	....	....	6 drachms.

A teaspoonful to a tablespoonful, two or three times a day after food, in some water. The solution should be kept in a coloured bottle. **Schuller** used with benefit inhalations of guaiacol in phthisis; and **Horner**, after four years' experience of it, speaks well of guaiacol in tuberculosis. Most patients take it well, and they improve in appetite and strength. It may be given in pill up to as much as seven or eight minims a day. (*Med. Chron.*, Sept.)

15. Anthrarobin.

Dr. Behrend (*Viertel. f. Derm. u. Syph.*, 1888, 2 Heft, p. 261) has made experiments with a substance discovered by **Professor Liebermann**, of Berlin, named anthrarobin, which has an analogous action to that of chrysarobin and pyrogallie acid, being less active than the former and more active than the latter. It is a reduction product obtained from alizarin or purpurin. It produces less inflammatory irritation than chrysarobin, and does not present the dangers of absorption which attach to pyrogallie acid. In dispensing it requires to be rubbed up with olive oil before being mixed up with the ointment basis; 10 and 20 per cent. ointments are used. Although it is insoluble in water, it becomes soluble by the addition of borax, and is also very soluble in alcohol and glycerine. Anthrarobin 10, borax 8, distilled water 80, is one formula; anthrarobin 20, borax 35, alcohol and glycerine each 90, is another formula. Anthrarobin stains the skin and linen, although not so intensely as chrysarobin, and so little irritation does it produce that it may be applied to the head and face, and even to the eyelids. The alcoholic tincture is preferred to ointment, and the action of this substance is much increased if the part is washed with soap, particularly potash soap, before it is used. It acted successfully in cases of psoriasis and erythrasma. It cures psoriasis less quickly than chrysarobin, but more quickly than pyrogallie acid. (*Brit. Med. Journ.*, June 9.)

16. Glycerine as a purgative.

The fact that a small quantity of glycerine injected into the rectum causes a ready action of the bowels, appears to have been

discovered by Dr. Oidtmann, of Maastricht. Dr. Anacker contributed a paper upon this subject to the *Deutsch med. Wochens.*, Sept., 1887, and Dr. Althaus speaks in the highest terms of the value of this plan. About $\frac{1}{2}$ to 1 teaspoonful of glycerine is injected with a glass syringe and an evacuation generally takes place either immediately or within a few minutes. (*Brit. Med. Journ.*, Dec. 24, 1887.)

I was consulted recently by a young gentleman, aged sixteen years, who for years had been troubled with obstinate constipation. His bowels rarely acted without medicine. Four days ago I prescribed an enema of a teaspoonful of glycerine with an equal amount of water. It operated within half an hour, and each day subsequently the bowels acted naturally without medicine.

17. Hyoscine.

Kobert has shown that most of the commercial amorphous hyoscyamine is a mixture of that alkaloid with hyoscine. The presence of hyoscine in henbane explains the difference of action between that plant and belladonna, to which it is in many respects similar. Hyoscine, like atropine, dilates the blood-vessels, dilates the pupil, and diminishes the secretion of the saliva and perspiration. It has, however, no action on the vaso-motor centre. Kobert says it paralyzes the vagus without increasing the frequency of the pulse, while Wood says it has no action on the vagus. Hydrochlorate of hyoscine is the most useful salt to employ medicinally. According to Gley, one drop of a 1 per cent. solution caused dilatation of the pupil and paralysis of accommodation for five days. A solution of 1 in 1,000 will dilate the pupil (Emmett). Tweedy considers hydrobromate of hyoscine a rapid, powerful, and unirritating dilator of the pupil. Its use is accompanied by none of the dryness of the throat that so commonly follows the use of atropine as a mydriatic. The chief employment up to the present time of hyoscine in medicine is as a cerebral sedative and a narcotic. It has but little effect on the functions of the brain of the lower animals (Sohrt), but in delirium (Bruce), mental excitement generally, and insomnia (Sohrt, Tirard) hyoscine seems to be of distinct value. The dose is $\frac{1}{200}$ to $\frac{1}{10}$ or $\frac{1}{50}$ of a grain. Though Kobert says that the drug has no bad effects in this dose, yet both Bruce and Wood have observed serious interference with respiration, lividity, hallucination, delirium, nausea, and vomiting. Hyoscine, though a valuable addition to the class of cerebral sedatives, must therefore be given with great care. (*Brit. Med. Journ.*, Dec. 31, 1887.)

18. Codeine.

Dr. Lauder Brunton strongly advocates the use of codeine in

allaying abdominal pain. It can be pushed to a much greater extent than morphine without causing drowsiness or interfering with the respiration or the action of the bowels. He generally gives $\frac{1}{2}$ grain in pill, three times a day, increased if necessary. (*Brit. Med. Journ.*, June 9.)

In the *Practitioner*, July, 1888, Dr. Mitchell Bruce contributes an interesting and valuable paper upon the comparative value of codeine and morphine in the treatment of diabetes. Morphine completely removed the sugar from the urine in two cases, which codeine did not. The best effect was obtained from about 6 grains of acetate of morphine *per diem*: from phosphate of codeine not until about 30 grains (= 21 grains of codeine) were given. Codeine costs 18s. per ounce; acetate of morphine, 5s. 9d. per ounce.

19. Erythrophlœin.

This African product has been the subject of a lively debate in the Berliner Medicinische Gesellschaft (*Berliner klin. Wochensch.*, 1888, March 5, also February 27). Dr. Lewin asserted that it possessed a local anæsthetic action far stronger than that of cocaine. Prof. Liebreich replied that the sample examined by Dr. Lewin was in reality a snake-poison, from the *Naja Haya* snake, and that the rosy-red coloration produced by evaporation with sulphuric acid is shown also by snake-poison, and even by dried egg or serum-albumen. Dr. Schöler read a paper at the last meeting of the above society, in which he confirms Lewin's results. An erythrophlœin solution of $\frac{1}{3}$ per cent. strength, when dropped into the eye, gave rise to a good deal of irritation at first, but perfect insensibility of the cornea ensued in about twenty minutes or half an hour. The pupil was not affected, and intra-ocular pressure was lowered, but a slight degree of hyperæmia of the conjunctiva persisted for a long time, and the subject of experiment complained of a feeling of weight in the upper lid, a sensation as of a veil before the eyes, and of interference phenomena—for example, coloured rings. On the other hand, Dr. Loewenhardt, of Breslau, writes in the *Berliner klin. Wochensch.*, March 5, to the effect that he obtained no anæsthesia, but a considerable degree of hyperæsthesia, after subcutaneous injection in animals, and found that he could easily produce sloughing. Dr. Epstein, of Nürnberg, in an original communication to the *Centralb. f. klin. Med.*, March 3, finds that erythrophlœin has only a slight local anæsthetic action when subcutaneously injected, and that a good deal of pain is caused by it. (*Brit. Med. Journ.*, March 10.) Goldschmidt confirms Lewin's views.

The term *Haya* poison has been employed in connection with

the product examined by Lewin, but its etymology is almost comical, for Mr. T. Christy, who supplied the drug to Lewin, has written to say that the name "Haya" was given because a Mr. Hay, of Aden, procured the substance (!).

20. Creolin.

This compound is a coal-tar compound obtained from the creasote-yielding products of suitable varieties of English coal. It is manufactured by Jeyes' Sanitary Compounds Company. It comes into commerce in its undiluted state as a dark-brown, syrupy fluid of a not unpleasant tar-like odour, soluble in ether and in alcohol, and is entirely miscible in any kind of water in all proportions. Milky clouds are at first generated, extending until a thorough emulsion is formed. It is both volatile and permanent. Laboratory experiments upon the action and value of the product as a disinfectant and antiseptic have been conducted by Prof. Attfield, who states that it is a true germicide. One part in one thousand of water gave a solution in which he could not get germs to develop, and in killing the minute bodies believed to be the cause of infection, it is a true disinfectant. It prevents decay and putrefaction, and is, therefore, a true antiseptic. In Germany and Austria the valuable properties of creolin have been recognised and demonstrated by Fröhner, Von Esmarch, Max Kortum, Eisenberg, Jessner, Spaeth, Neudörfer, Klamann, Breitung, Fischer, and others. The following extract is from a report on creolin by Prof. Fröhner, of Berlin. Observing that, with a daily increasing mass of new medicinals, he entered with very great reserve on a thorough examination of this product from a chemical and pharmacological point of view, he states that an examination of three months convinced him that creolin may be considered a valuable enrichment of the medicine chest, and that, being entirely non-poisonous, he pronounces it to be the *beau ideal* of a disinfectant, and to be entirely preferred to carbolic acid. Dr. Fröhner states that it is valuable as an antiparasitic for epizoa, also for mange in dogs, also sheep scab caused by sarcoptes, which yield readily to treatment with a 1 to 3 per cent. aqueous solution of creolin; and, in regard to national economy, he warmly recommends it for use in Australia, the Cape, New Zealand, and South America, for destroying the most tenacious of all sheep-scab mites, namely, *dermatodectes ovis*. Dr. Fröhner also advises a 3 per cent. solution of creolin in place of carbolic acid for operations, wounds, abscess-cavities, necrosis of bone, and severe inflammation of the skin. Also, as an inhalation for infectious bronchitis and bronchopneumonia, and for many other purposes for which reference may be made to the original report in the "Archives of Scientific and Practical Surgery, Berlin, 1887."

The report of Prof. von Esmarch indicates that creolin proves more efficacious than carbolic acid in the destruction of various micro-organisms, such as bacteria, bacillus, anthrax spores, etc. Commercially it is cheaper than carbolic acid, and relatively more effectual, inasmuch as a 3 per cent. solution of creolin equals a 5 per cent. solution of carbolic acid. (*Brit. Med. Journ.*, Nov. 3, 1888.)

A detailed series of experiments has recently been made in the Vienna Hygienic Institute by Eisenberg on the antiseptic properties and practical utility of creolin. The experiments were performed by mixing a certain percentage of the antiseptic with bouillon-cultures of the organism, from which mixture, after a certain time, the presence of living bacteria was tested by a fresh cultivation free from creolin. It was found that a 2 per 1,000 mixture of creolin killed the cholera bacillus and the streptococcus of pus and of erysipelas within two minutes; the bacillus of anthrax was killed in five minutes, while the typhoid bacillus and the staphylococcus of pus were still alive after one hour. This last organism, as well as tetragenesis, was killed in ten to fifteen minutes by a 2 per cent. mixture. Compared with carbolic acid, it was found that a 3 per cent. mixture of creolin killed the spores of the anthrax bacillus in two days, a 6 per cent. mixture within twenty-four hours, while a carbolic acid mixture up to 8 per cent. had no effect on the spores within seven days. A similar comparative result was obtained with the hay bacillus, and the superiority of creolin over carbolic acid was further shown by its greater power in preventing the growth of organisms in cultures. Creolin is not poisonous, as it may be given in large doses to dogs without deleterious effect. Eisenberg recommends its use in surgery in place of corrosive sublimate, carbolic acid, and iodoform. Späeth has strongly recommended its use. He has applied it in the form of emulsion or a creolin gauze, and found that it stimulates the growth of granulations, and aids in separating sloughs without the production of any toxic symptoms. The urine does not present the green colour of carbolic acid urine, but tribromophenol may be separated from it on the addition of hydrochloric acid and bromine water. (*Brit. Med. Journ.*, Nov. 10.)

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